Gleanings in Bee Culture

November, 1945.....Vol. 73, No. 11

Beekeeping in Britain

By Reginald Gamble

Founder and chairman of the Mid-Hertfordshire Association (not far from London). He has been a beekeeper for 15 years apart from his full time job with the London and North Eastern Railway.

Since September, 1939, problems of many unprecedented kinds have worried Britain's beekeepers: what to do with bees in the event of a gas attack; the effect in winter through vibration caused by low-flying aircraft; how to give first aid to stocks damaged by bombing, and the problem of stocks becoming vicious and unmanageable overnight as a result of nearby flying bomb blast.

These are, however, incidental wartime problems that the British beekeeper has dealth with in his stride.

Apart from this sort of thing, has British beekeeping a story to tell? Well, I think it has, although first it is necessary to explain some of the larger problems with which apiarists in Britain have been faced in past years.

In the first place, it is only recently that beekeeping has been recognized as being of national importance in increasing the production in crops of fruit and seed. Without that official backing the industry had to struggle against odds.

Secondly, British beekeepers have never been organized on an effective or national basis—a very serious drawback, for without it it is impossible to obtain the maximum benefit from their bees either in honey production or in the pollination of crops.

Having made such admission it may seem difficult to believe that British beekeeping has made real progress and that today the standard is high. But it is, and this is entirely due to individual effort and to the untiring work of the beekeepers' associations scattered throughout the country.

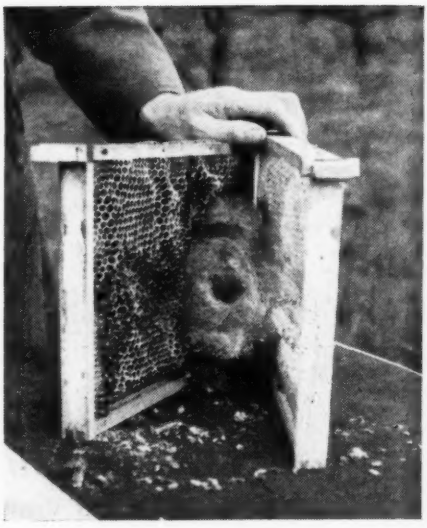
The registration of stocks in Britain is—unfortunately, I think—not compulsory, so there is no accurate record or knowledge of all beekeeping activities. However, my own estimate is that in the British Isles there are about 150,000 beekeepers, keeping in all 750,000 stocks. The total value of the industry would be in the region of $32,000,000.

For the most part we are "small" beekeepers—that is, we keep on an average up to five stocks—and we do this either as a hobby or in order to provide additional sweetening food for the table. That is, of course, a very important point in these days of rationing. We are scattered over the whole of the country, and although this may be beneficial from the point of view of good general pollination of crops, it makes organization somewhat difficult.

But this huge force of "small" men has its compensations, for it includes people from all walks of life—the railwayman, the farm laborer, the village doctor, the squire, the par-

Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly. Subscription Price—1 year, $1.00; 2 years, $1.50; 3 years, $2.00. Foreign, 25c additional.

Even the bees do not escape the horrors of modern war. All that is left of an apiary following a near miss!



Mice cause more damage than is generally appreciated in this country. Here is a complete nest found amongst the combs

son, the lawyer, the scientist, the engineer, the farmer, and—yes, the Harley Street specialist who has no site for his hives other than on his London roof! The important point is that all of them join in the common cause—the advancement of the ancient craft of beekeeping.

True, we have our commercial men, but they are few and generally include in their business the sale of bees and appliances, or work their bees in conjunction with fruit-growing or a small holding. The season is so short—four months at the outside — and the British weather so very variable, that it is virtually impossible to make a living solely from honey production.

And then, although we are an agricultural country, we have no really large concentrations of nectar-producing plants. In short, our weather is not suitable, our fields are small and our crops varied—like a patchwork quilt, a little of everything—so that even when our weather does permit of a "take" the re-

Is all well within? It is a common practice with British beekeepers in the quiet season to judge the condition of stocks by tapping on the hives and "listening in."

sult is more or less a natural blend.

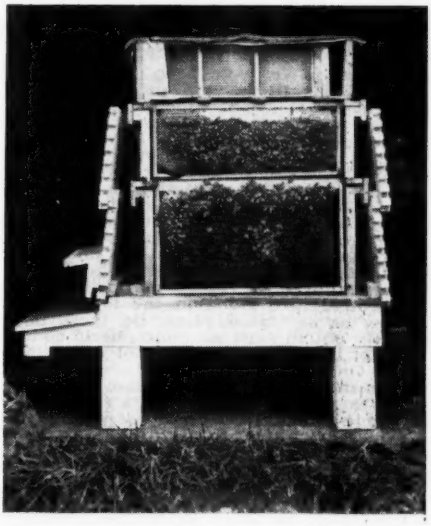
And as regards "takes," although one occasionally meets 200 or 300 lbs. from a stock, the average for the whole of the country would be between 30 and 40 lbs. per stock.

As to our organization, each county has one or more beekeepers' associations, each conducting its own affairs and working on a purely voluntary basis. We have no state inspectors, but instead each association appoints honorary experts who advise the members in their locality, and thus each district is more or less covered.

Although most of the educational work falls upon the associations, in most counties, the Agricultural Department takes an active interest and assists not only in the supply of lecturers, but in some cases makes a small grant of money to help defray the expenses of this educational work. Except for such grants the associations are entirely self-supporting. Each member is required to pay an annual subscription of about five shillings ($1.00) which, in many cases, also covers the supply of one of the small beekeeping journals.

Quite recently there has been a new development so far as organization is concerned, for our oldest association, the British Beekeepers' Association, has been reorganized so as to form a central body to which associations send delegates. In this way problems can be sifted locally, and, where necessary, submitted to the central body for further action. This is definitely a step in the right direction, but much work remains to be done before our industry assumes its rightful place in the natural scheme of things.

Prior to the war some of our agricultural colleges included beekeeping in their curricula, but although this has been suspended temporarily in England and Wales, it still continues in Scotland. Personally I foresee a big development in this direction after the war, and that in itself would mark a big step forward in British beekeeping and in the craft generally.



The "W.B.C." — a double-walled hive in general use in Great Britain.

And then we have our experimental stations, such as that at Rothamsted, where such problems as pollination and diseases are receiving attention. But, with the exception of such highly technical problems beekeeping as we know it in Britain today has attained its high level entirely as the result of the devotion to the craft of the beekeepers themselves.

Their reward should be a pooling of knowledge, together with training schemes organized on sound lines, and this, I am sure, will come.

HONEY IN THE WHITE HOUSE

By F. L. Swanson

Mr. M. L. Queen, of Independence, Mo., (President Truman's home town), was given a recipe for honey cookies by Vietta Garr, who I imagine is the President's cook. Mr. Queen has an order for a 60-lb. can of honey to be sent to the White House this fall. Here is the recipe:

Honey Cookies

1½ cups honey, 1 cup shortening, 4 cups flour, 1 tps. baking powder, ½ tps. soda, 1 tps. cinnamon, ½ tps. nutmeg, 1½ cups raisins, 3 eggs.

Cream shortening, add honey, baking powder, soda, flour, and eggs, one at a time (alternate with flour), then other seasonings. Drop on greased cookie sheet (1 teaspoonful). Bake in moderate oven.

At What Temperature Will Bees Fly?

By C. R. Walker

[This article by C. R. Walker is very interesting. We have been watching our bees out here in the yard and have noticed particularly this, that the bees in hives, packed, would show no flying bees. It seemed plain that when the hive is single-walled the interior of the hive warms up quicker than when there is a double thickness. To put it more exactly, the temperature of the air inside of a single-walled hive is higher when the sun shines on it than it is in a double-walled hive. Both theory and practice substantiate this statement, especially Mr. Walker's figures.

Now right here comes the point when the temperature along in the low 40's or as low as 36° takes place, do those bees that fly out in such an atmospheric condition get back? Walker does not cover that point. On the other hand, if bees can take a cleansing flight from a single-walled hive when they will not take such a flight from a double-walled hive, there's a point to be considered—provided, also that the bees in either case get back into the hive.

Langstroth brings out something of the same thing in his early writings. While he favored double-walled packing in his first book (1853), he later, in his next edition (1857), says that he overestimated the value of protection to the hives, probably meaning packing. (See page 418 last issue.)

In that connection he tells of the value of winter sunshine when it comes, warming up the air inside of a single-walled hive so that the bees, after they have eaten the stores around the cluster, can move the whole cluster to a point where honey is to be had. Years ago, we opened up several hives (old-fashioned, double-walled packed hives), and found in a number of cases that the cluster had starved to death, and yet the honey was within two inches of the edge of the cluster. We did not then winter in single-walled hives so when the sun came out, it did not penetrate the cluster, and the bees, unable to move because of the cold, starved to death. We found many cases like that in A. I. Root's very heavily packed colonies. We did not then think of the importance of having comparison tests made with single-walled hives. We did not then grasp the idea of the importance of sunshine warming up the inside cluster at certain intervals in the winter.

Walker, in his last paragraph, makes a very important point when he says, "It is a scientific fact that moist air transmits heat away from the body faster than dry air and there is a formula by which one can figure the difference in rate of transmission with different degrees of moisture in the air. The difference in rate of heat transmission is small but it may be sufficient to allow flight at a high altitude where the relative humidity is low."

In this connection we have been trying to point out that in the earlier days when we advocated heavy packing, we did not realize the factor that caused the death of the bees. A. I. Root lost over 90% of his bees in his double-walled hives in the winter of '80 and '81. Colonies were heavily packed and where the cushions were wet the bees were dead.—E. R. Root]

Each year in beekeeping we see the revival of discussion concerning some point of interest and in some cases a search of the literature discloses early beekeepers advocated practices which many may think are recent discoveries. Among the many points being discussed is that of the behavior of the cluster in winter and the effect of various kinds of insulation or protection on the activities of the winter cluster. Little has been done to determine the temperature and conditions under which the bees may normally fly.

Root (1) under the discussion of temperatures states, "When the colony is without brood, and the bees are not flying, the bees generate practically no heat until the cooled point among the bees reaches a temperature of 57 F.," and later in the same discussion says, "When the temperature falls to approximately 56 F., the bees begin to generate heat above the basal output although not all the bees will actually join the cluster at that temperature." (p. 98-99).

Phillips (2) states, "The individual bee can move the muscles which activate the legs at a temperature as low as 45 F., but the wing muscles fail to lift the body at air temperatures lower than about 50 F." (p. 68), and later in the same book says, "Bees do not normally discharge their feces in the hive, but even after a short confinement will venture out as soon as the outer temperature permits. They may try to fly for this purpose at 50 F. if such flight is needed." (p. 98).

Over a period of twelve years I have kept five to fifteen hives of bees for experimental purposes. Our altitude is about 7650 feet; the first frosts usually come in the fall during the first two weeks in September and sometimes the last week of August, and we usually have a killing frost as late as the first week of June; winter temperatures often drop to a -40 F.; and usually bees are confined from the middle of November to the latter part of February or early March. Italians, Caucasians, and Carniolans and their hybrids have been wintered in various types of insulated and packed hives and more recently the summer hives have been wrapped in only one thickness of black building paper. Five years ago a hole five-eighths inch in diameter was bored

in the hand hold of the upper hive body, but that was not sufficient to keep the combs dry and now after changing the size each winter an inch hole is used and no other provision for the escape of moisture is made. An opening three-eighths by two inches is left at the bottom.

Last winter two hives of Italian-Caucasian hybrids were kept in town within a hundred feet of the kitchen door and only five blocks from the government weather recording station. One of these was in a vermiculite-insulated hive and the other in the summer hive wrapped with one thickness of black paper. Both were in double 10 frame hives and had a three-quarter inch hole in the upper body and a three-eighths by one inch bottom opening. Following is a table showing the dates on which flight occurred and the highest temperature recorded for that date.

Date	Insulated hive	Summer hive with paper	Highest temp.
Feb. 5, 1944	Cleans. fl.	Cleans. fl.	41 F
Feb. 6, 1944	No flight	Cleans. ft.	38 F
Feb. 24, 1944	Cleans. fl.	Cleans. fl.	40 F
Feb. 28, 1944	No flight	Gen'l. fl.	36 F
Mar. 1, 1944	Cleans. fl.	Cleans. fl.	42 F
Mar. 2, 1944	Cleans. fl.	Cleans. fl.	45 F
Mar. 3, 1944	Cleans. fl.	Cleans. fl.	41 F
Mar. 4, 1944	No flight	Gen'l. fl.	36 F
Mar. 5, 1944	No flight	Cleans. fl.	35 F
Mar. 6, 1944	No flight	Cleans. fl.	34 F
Mar. 16, 1944	No flight	Cleans. fl.	39 F
Mar. 17, 1944	Gen'l. fl.	Cleans. fl.	48 F
Mar. 24, 1944	Gen'l. fl.	Cleans. fl.	44 F
Mar. 30, 1944	Gen'l. fl.	Cleans. fl.	48 F

This winter a vermiculite - insulated hive and a summer hive without any protection are being used. The insulated hive is one and a half stories and the unprotected has two regular 10 frame bodies. Both have an inch hole in the upper hand hold and a three-eighths by two inch bottom opening. The following table shows the dates of flight and the highest temperature recorded:

Date	Insulated hive	Summer hive	Highest temp.
Jan. 8, 1945	Some fl.	Cleans. fl.	44 F
Feb. 2, 1945	No flight	Gen'l. fl.	43 F
Feb. 8, 1945	No flight	Some fl.	36 F
Feb. 14, 1945	Some flight	Gen'l. fl.	45 F
Feb. 23, 1945	No flight	Some ft.	38 F
Feb. 25, 1945	No flight	Cleans. fl.	41 F

Records of flight for March and to April 12 have been kept and correspond to the record for March of 1944. Both hives in April are flying freely at temperatures as low as 42 degrees F. and are rearing brood. No flight occurs at the lower temperatures if there is even a slight wind.

When recorded data conflicts with previous findings, there is sometimes a disbelief of its truth until further experimentation; but in general the reader begins to look for the causes of the differences of the findings.

It is a scientific fact that moist air transmits heat away from a body faster than dry air and there is a formula by which one can figure the difference in rate of transmission with different degrees of moisture in the air. The difference in rate of heat transmission is small, but it may be sufficient to allow flight at a high altitude where the relative humidity is low. This may not be the only reason the bees can fly regularly at a temperature which is given as below a point where the wings can support the body, but it offers one possible explanation.

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(1) Root, A. I. ABC and XYZ of Bee Culture, A. I Root Co., 1945.
(2) Phillips, E. F. Bee-Keeping, MacMillan, 1942.

Gunnison, Colo.

A WOMAN PIONEER BEEKEEPER

By Henry H. Keck

One of Idaho's leading ladies in beekeeping was laid to rest on August 13, 1945, at Burley, Idaho. Mrs. Maggie S. Keck, age 54, was born in Fruita, Colo., 1891. She came to Idaho in 1908. After her marriage in 1913 to Mr. Henry Keck, she began her career as a beekeeper. By experimenting with the uses of honey in her home, she thus helped the Mountain States beekeepers to sell their honey. Mrs. Keck completed many tested recipes for Mountain States honey. She gave interesting demonstrations at homes and clubs throughout Idaho. Every fall at Fair time, her exhibits were truly a work of art, and she displayed beautiful samples of honey as well as tempting home-canned fruits, jellies, cakes and pies.

In 1926, the Kecks shipped a carload of bees from California to Idaho, Mrs. Keck assisting in this undertaking. Experimenting with California honey, she found it much different to work with than Idaho honey.

While her husband was State Bee Inspector for four years, Mrs. Keck went with him as his deputy. She did marvelous work, and made many friends throughout Idaho.

Ottawa Tests on *Wintering Nuclei*

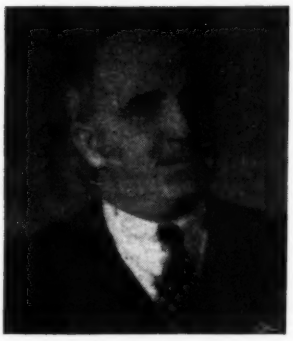
C. B. Gooderham, Dominion Apiarist
From September, 1945, Canadian Bee Journal

The idea of wintering nuclei is by no means a new one but how far back it dates or who originated it I am unable to say. On page 239 of "The Canadian Horticulturist and Beekeeper," October, 1918, however, the late F. W. L. Sladen, former Dominion Apiarist, reported the results of preliminary experiments conducted by him at Ottawa in 1917. Later reports on this work appeared in the "American Bee Journal" during 1919 and 1920.

The experiments as carried out by Mr. Sladen were primarily intended to control early swarming and to increase colony production. The question of safe wintering was of course involved but no difficulty was experienced in this connection.

Early Swarming

At the time of these early experiments a fairly heavy crop of honey was being obtained early in the season from dandelion and fruit bloom. This flow extended over a period of about two weeks and was accompanied by a brief but acute swarming period especially from strong colonies. To overcome this early swarming, Mr. Sladen developed the idea of removing the queen from all strong colonies at the beginning of the main honey flow and splitting the brood nest in two by inserting a division board in the center of the hive and allowing the bees to rear a new queen in each of the two compartments formed by the division board. The hive entrance was, of course, blocked and contracted so as to form a separate entrance to each compartment. These divided colonies were wintered as such and the following spring, about the latter end of April or early May, the stronger half of each double was transferred to a separate hive, the division board withdrawn and both hives given a full complement of drawn comb. These half colonies were then too weak to swarm during the early honey flow but built up into two good producing colonies for the main flow from clover; thus the object for which



C. B. Gooderham.

the experiment was designed was accomplished. As already stated little or no stress was laid on the possibilities of this method as a means of wintering over surplus queens, although Mr. Sladen did state in his report that spare queens for emergency requeening in the spring were of great value, indicating that he had this idea in mind.

Conditions Changed

Conditions at the Ottawa apiary have changed considerably since Mr. Sladen started his experiments. The early honey flow has disappeared and the necessity for early swarm control went with it. It is no longer possible to increase production by this method of wintering two nuclei in a single hive except by leaving both queens in the one colony until the beginning of the main flow and then removing one of them. The project, however, has been continued but its object changed to one of wintering surplus queens.

The early method of getting the two nuclei into one hive was abandoned because of a high percentage of failures. Too many of the colonies failed to produce more than one queen so that when the main crop was removed the bees on one side of the division board were found queenless and had to be requeened which was not always easy to do.

Three Main Methods

For a number of years the three main methods of establishing double colonies or nuclei for wintering were: (1) To form two small nuclei in one hive from strong colonies during the main honey flow and giving a ripe queen cell to each

nucleus. These nuclei build up to fair strength for winter with little or no care until feeding time in the fall. (2) Bringing together in one hive two weak colonies at the time they are being prepared for winter. Such colonies are usually united and one of the queens sacrificed. (3) Uniting, two in a hive, all bees and spare queens remaining in mating boxes from queen rearing experiments.

In preparing the double hives it is imperative that each compartment be absolutely beetight, otherwise all queens but one in the hive will be lost. The weak spots are: (1) The frame rests at the ends of the division board; these must be blocked. (2) The hive entrance; there must be no bee space between the lower front edge of the division board and the entrance block. (3) The upper edge of the division board; this must be arranged so that the bees of one compartment cannot cross to the other.

The feeding of the double nuclei is just as simple as the feeding of ordinary colonies.

Important Results

During a period of 19 years, 141 hives each containing two nuclei with 282 queens were wintered in the bee cellar at Ottawa with a loss of only 23 queens or 8.2%. In only one case were both queens lost in the one hive. In other words, only one of the 141 double colonies was actually lost. The colonies that lost one of their queens reverted to singles in the spring by withdrawing the division boards.

During the 25 years 1919-'44, 106 double nuclei containing 212 queens were wintered outside in packing cases with a loss of only 9 queens or 4.2%. In no case were both queens lost outside.

Of the total 494 queens in double nuclei put away into winter quarters only 32 or 6.5% were lost. This is less than the estimated annual loss of normal colonies and was no doubt largely due to the fact that all nuclei were headed with young queens and consisted mainly of young bees.

The Main Points

The main points to be stressed here are that of the 247 double nuclei put away for the winter, 246 of them came through safely and that 216 of them still contained two queens which meant 216 surplus queens for emergency requeening if necessary in the spring. If the surplus queens were not needed elsewhere the nuclei were divided and used for other purposes.

Since 1935 we have been trying to winter three and four nuclei in single hives with more or less success. During the nine year period 1935-'43, 87 nuclei were put away in triple boxes with a loss of 22 queens or 25.3% while 108 were housed in quadruple boxes with a loss of 33 or 30% loss of their queens. These nuclei were all wintered in a bee cellar where conditions were far from ideal. The results varied from year to year. Sometimes the loss was heavy while in some seasons it was quite light. Considering the whole period, however, the loss was too heavy to recommend more than two nuclei to the one hive as the latter can be wintered either indoors or out with a minimum of loss.

In addition to the multiple nuclei we have also experimented with two and three frame nuclei in single boxes with very poor success. Most of these nuclei either perished outright or were too weak in the spring to be of any value.

Comparison of Methods

In 1935 it was decided to compare a number of the nuclei wintered in double hives with imported two-lb. packages of bees. The nuclei were started, two in a hive the previous July with one small patch of brood and bees and a ripe queen cell. They built up fairly well by fall and the honey they stored was supplemented with sugar syrup as winter feed. These nuclei were wintered in the cellar. The same method of making the nuclei was used each year of the five the experiment was carried and the results are shown in the following table:

Year	1935		1936		1937		1938		1939	
	Nu.	Pk.	Nu.	Pk.	Nu.	Pk.	Nu.	Pk.	Nu.	Pk.
No.	6	6	4	5	8	5	8	5	8	15
Aver. Crop	61.3	61.2	68.3	65.7	46.4	20.6	229.4	251.°	96.3	104.8

The five year average for the nuclei was 106.5 pounds and for the packages 100.8 pounds.

The estimated average cost of establishing the nuclei and bringing them through the winter was $1.30 while the average cost of the pack-

(Continued on page 482)

The Upper Flight Hole

Its Importance in Good Wintering

By R. E. Newell

The upper flight hole has been a much discussed subject among beekeepers the past few years, and my experience during the past few seasons with them has been most favorable. Beekeepers operating a hundred or more colonies in outyards at some distance from home will find that the flight hole is of great value.

Our first trial with the upper flight hole consisted of ten colonies in single wall hives with a five-eighths inch hole in the hand hole of the upper food chamber. Empty supers of dry sawdust were used above the inner covers for protection, and no other protection given except windbreaks. The bottom entrance was reduced by the standard entrance block to the small entrance, and this was left open throughout the winter and early spring. Where the upper entrance is made at the extreme top, a bottom entrance might cause all the warm air in the upper portion of the hive to escape. Therefore, I prefer to have the upper flight hole several inches from the top so that the heat from the cluster keeps the space at the extreme top warm enough for the bees to move over the tops of the frames should it be necessary to move over to full combs of honey.

The ten colonies came through the winter in fine condition and we have been using the same method for several years without the loss of a single normal colony. With the increase in the numbers of colonies in our apiaries, we have discontinued the use of top packing but have reversed the inner covers to provide more space above the frames, and to make it easier to place pollen substitutes during the cold weather of early spring. We find that this space is utilized by the bees during cold weather. Our only top packing during the past few years has been the use of folded newspapers between the inner and outer covers.

Where the bees must be left in an open exposed position, we have found the use of tar paper on the sides and rear of the hives has many advantages. Such packing is inexpensive, easy to apply, and requires only a few minutes to remove in the spring, and makes no clutter in the apiary.

We find less moisture in the hives provided with the upper flight hole, and it is moisture within the hives

(Continued on page 483)

Inspection in late fall

This is a windy location and bees are protected with tar paper on three sides.

The Thanksgiving Dinner

By Mrs. Benj. Nielsen

Individual pumpkin pies.—Photo courtesy Kellogg Co.

Try your old favorites the honey way this year, if you have not done so before, and when you give heartfelt thanks for reunion, peace and plenty and eat those luscious honey goodies, you will want to add a postscript for possessing that finest of all sweets—and for the good sense to use it!

Stuffed Turkeys

Filling: 1½ cups seeded raisins, ¼ cup honey, ⅓ cup water, and 1 tablespoon lemon juice.

Dough: Three-fourths cup shortening, ¾ cup honey, 1 tablespoon grated orange rind, 3 cups fortified wheat flakes, 2¼ cups sifted flour, 3 teaspoons baking powder, ½ teaspoon salt and ⅓ cup milk.

Grind raisins. Cook raisins, honey, water, and lemon juice over low heat until thick. Cool.

Blend shortening and honey together thoroughly; add orange rind. Crush cereal into fine crumbs. Sift flour, baking powder, and salt together; mix with crumbs. Stir into shortening mixture alternately with milk; mix well and chill. Roll dough thin on floured board. Cut with floured turkey cutter, put teaspoon filling on half of turkey shapes, top with remaining turkeys, press edges together with tines of fork. Bake on lightly greased cookie sheet in moderately hot oven, 12 to 15 minutes. Yield: 2½ dozen.

Individual Honey Pumpkin Pies

One and one half cups pumpkin, ⅔ cup honey. ¼ teaspoon cloves. 1½ teaspoons cinnamon, 1½ teaspoons ginger, ½ teaspoon salt, 3 eggs slightly beaten, and 1 cup top milk, scalded.

Combine ingredients in order given; mix well. Pour into unbaked pastry shells. Bake in moderately hot oven, 450 degrees F., for 15 minutes, reduce heat to 350 degrees and bake until done. Yield: 8 3½ inch pies.

Individual Pastry Shells

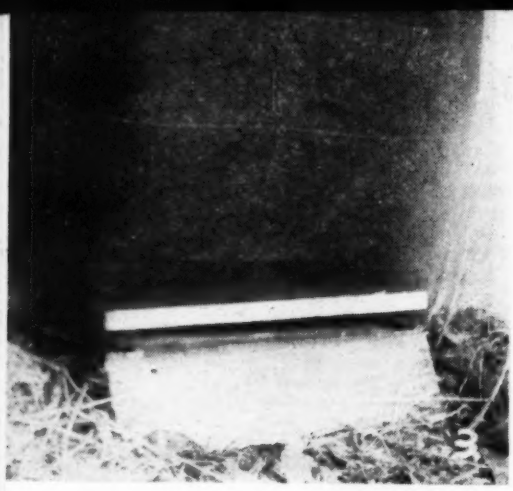
One-third cup bran, 2 cups sifted flour, ½ teaspoon salt, ⅔ cup shortening, and 6 tablespoons cold water (about).

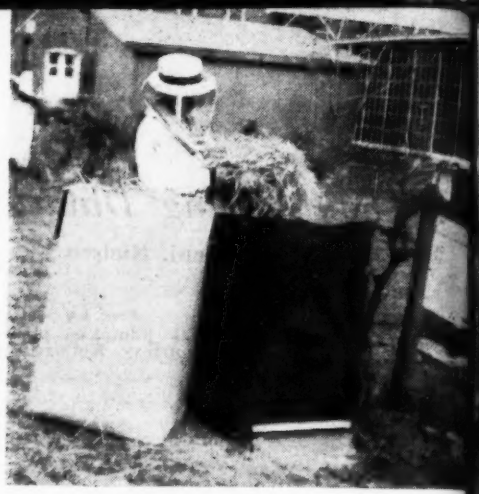
Crush bran into fine crumbs; mix with flour and salt. Cut in shortening. Add water, a little at a time, mixing until dough is just moist enough to hold together. Roll out to ⅛ inch thickness on lightly floured board. Fit into small pie pans or muffin tins. Trim edges. Yield: 8 3½-inch pastry shells.

Honey Parker House Rolls

Crumble 1 cake yeast in 1 cup lukewarm water, add 1 tablespoon honey and let soak for 20 minutes. Then stir in enough flour to make a sponge and let raise until bubbly —about 30 minutes. Scald 1 cup milk. When almost cool, add ½ cup honey, 4 tablespoons butter, and ½ teaspoon salt. Stir until honey is dissolved. Beat three eggs until light and stir into honey-milk mixture. Then mix all together, adding about 4 more cups of sifted flour. Put on floured board and knead well. Let raise in greased covered bowl until doubled in size. Work down and let raise again until slightly better than twice in size. Form into rolls, let raise until very light. Bake in moderately hot oven, 400 degrees F., about 20 minutes.

This recipe makes delightful cinnamon rolls. Brush dough with butter, and honey, dust with cinnamon and roll up in usual manner. Place a generous amount of brown sugar in a well-greased baking pan, drizzle with honey and add sufficient cream or top milk to absorb sugar. Place rolls, cut side down, in pan. Let raise until very light and bake as above.





Packing Bees for Winter

No. 1. Getting ready to pack bees in the experimental yard in November, 1944.

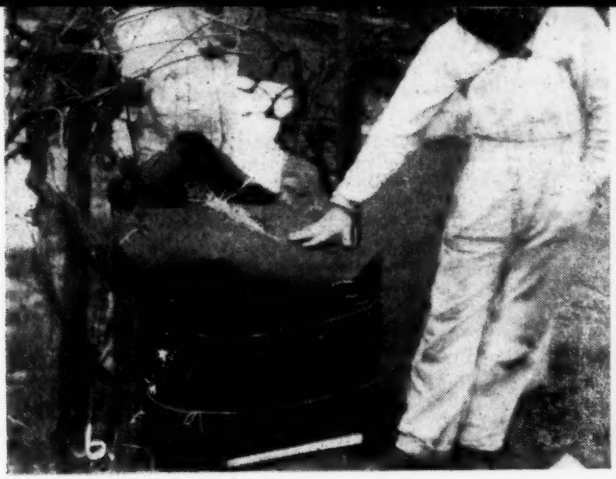
No. 2. Two-story colony ready to pack, with strip 16x2x⅜" tacked on the projecting bottom to form a tunnel.

No. 3. Asphalt paper placed around the hive and wooden strip nailed in front.

No. 4. Putting fine straw between the paper and the hive.

When I took charge of the Root Company apiaries, some 25 years ago, we wintered some bees in a bee cellar, some in quadruple cases and others in packed hives. We had 100 colonies in a yard five miles from Medina, all in quadruple cases. It was a problem to get the bees unpacked at the proper time, so that they would not drift from one hive to another. It was necessary to do the unpacking on a cool day when bees were not flying. One morning I took the gang out to remove the cases and gather up the packing material. The morning was cloudy and cool. We took off all the cases and cleaned up the yard as well as possible. About 10:30 a. m. the weather turned warm. The sun came out and the bees rushed out. Not being able to mark their locations they began to drift from one hive to another. Quite a number of hives on one side of the apiary were filled up to overflowing with bees while hives on the other side of the apiary were practically depleted. It was a sickening sight. That fnished my using quadruple cases.

For a number of years we used the Buckeye hive. When we started using the food chamber and wintering in two stories the problem was to have the upper story properly protected. We made a packed rim to fit around the upper hive.



By M. J. Deyell

Manager of The A. I. Root Co. Apiaries

No. 5. Two strings are tied around the paper to hold it in place.

No. 6. The top of the paper is folded down.

No. 7. The top paper, or cap, ready to be tied on.

No. 8. The finished product, except the paper is cut under the wooden strip to let the bees fly.

This seemed to work quite well for a time. However, we soon found that the packed rims became wet during the winter. In some instances, it was impossible to remove them from supers the following spring. In those days we did not use an upper entrance and the moisture seeped through the top of the hive into the packing and made it soggy. We eventually discarded the packed rims and during the past eight or ten years or possibly longer we have been wintering in two-story single-walled hives.

During the past few years we have been making some experiments comparing two-story colonies protected by asphalt paper, with fine straw between the paper and the hive, with colonies of similar strength in single-walled hives with no packing. I have already referred to one experiment written up in the 1942 Gleanings, page 331. Twelve two-story colonies were used in the experiment. The colonies were weighed (on a tested scale) November 21, 1941. Six were packed in asphalt paper with fine straw, five or six inches between the paper and the hive around the sides, ends, and bottoms, and 10 inches on top. Six were wintered without packing. The 12 colonies were weighed the following spring, April 21, just after the packing had been removed.

Here's what we found:

(1) The packed hives lost an average of 23¼ pounds in five months.

(2) The unpacked hives lost an average of 28½ pounds.

(3) The unpacked hives lost 5¼ pounds more than the packed hives. Just what is involved in this loss is not easily determined.

On April 24, we checked the 12 colonies and found the packed colonies had an average of 8½ combs containing brood while the unpacked hives had an average of 9¼ combs with brood. Notice I say, "combs containing brood," not "combs of brood." There is a difference. We intended to tabulate the amount of surplus honey all of the colonies stored that season, but unfortunately the honey flow was a failure.

On November 10, 1939, we weighed five two-story single-walled colonies and five two-story colonies in packed hives. On May 3 the following spring we again weighed the colonies. Those in single-wall hives without packing showed an average loss of 31 pounds, while those in packed hives showed an average loss of 23 pounds, a difference of eight pounds. Brood counts were made April 10. The packed hives had an average of brood in 2½ combs while the unpacked hives had an average of brood in 2¾ combs.

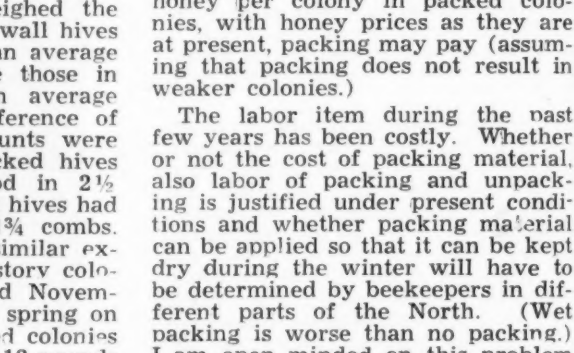
Last fall we started a similar experiment with eight two-story colonies. They were weighed November 24, then again in the spring on April 18. The four packed colonies showed an average loss of 12 pounds while the unpacked colonies showed an average loss of 21½ pounds. The unpacked hives lost 9½ pounds more than the packed hives. We did not take a brood count of these colonies, as many things happened last spring to interfere with our program.

It seems obvious that packing does save stores and it may conserve on bee energy. If, as shown in the two experiments, a larger consumption of honey in unpacked hives resulted in more brood and larger colonies, and granted that an ample amount of stores is needed for producing large colonies, the question seems to be: Is extra packing, if it retards normal brood rearing, justified?

I want to conduct further experiments including colonies wrapped only in building paper and keep tab on the amounts of surplus honey stored by the different lots of bees. That should tell us something.

It would seem, however, that with the saving of six or eight pounds of honey per colony in packed colonies, with honey prices as they are at present, packing may pay (assuming that packing does not result in weaker colonies.)

The labor item during the past few years has been costly. Whether or not the cost of packing material, also labor of packing and unpacking is justified under present conditions and whether packing material can be applied so that it can be kept dry during the winter will have to be determined by beekeepers in different parts of the North. (Wet packing is worse than no packing.) I am open minded on this problem and am willing to let the bees give us the answer.



AN APIARY IN AUSTRALIA

An apiary at Manneroo, Perth, Australia. The bees were recently transferred into these new hives and reconditioned.

Eighty Years Among the Bees

By E. R. Root

The late John Connor, in an article which he wrote in September Gleanings, 1943, made this observation: "Some things seem to require repeated telling before they draw attention, even going unnoticed at the time of publication, only to be taken from obscurity many years later."

He had in mind at this time the upper entrance which was introduced by Langstroth in 1873. Langstroth and son actually sold a great many hives with the upper entrance, and a picture of one of those hives is shown on page 520 of the September, 1943, issue. It is apparent today that means for the escape of excessive moisture have come to be regarded as necessary and important.

Two Schools

The means for the escape of moisture from the top of the brood nest has developed two schools—one that will lift up the super cover just enough to let moisture escape, but not the bees; and the other that allows not only the moisture to escape but the bees, superannuated, to fly out and die in the snow. The history of beekeeping during the last three-quarters of a century bears out the statement made by John Connor to the effect that some things seem to require "repeated telling" before they are accepted as a truth or as a policy.

Excessive Moisture

In the quotations from the past it was apparent that Langstroth was the first to see the danger of excessive moisture in wintering and now we have reports showing that means for the escape of moisture is one important factor in wintering overlooked until the last few years. This will be shown in some articles in the December number of Gleanings, in a way not reported before.

Pollen Substitutes

We have lately developed pollen substitutes and supplements — two different things, developed by Dzierzon, later by Langstroth, and still later by A. I. Root, when they advocated giving the bees common flour, or, better, rye meal to stimulate brood rearing, even during late winter before the bees could actually fly. Farrar, Haydak, and others, have shown the value not only of substitutes in the form of soybean flour but of supplements of real pollen, to make the soybean flour more effective.

Dry Sugar Feeding

Again in these latter days, we are just finding out the value of **dry** sugar feeding, something advocated by A. I. Root in the early 70's and continued by him through that decade. The only objection was that the sugar would rattle down between the frames and was sometimes lost. But A. I. Root overcame this by using loaf sugar which we can adopt today, but he preferred rock candy which the bees would utilize in midwinter without loss of any of their sweets. The objection to this rock candy was the difficulty in making it. If it was cooked too long, it would be spoiled as a food for midwinter; if not cooked long enough it would run down between the frames and clog up the bees. It is apparent that loaf sugar in mid-winter can be given to bees in between the upper and lower stories with safety.

The Wrong Kind of Packing

Loose straw or leaves loosely packed are much to be preferred to either planer shavings or chaff that are often worse than useless. Like a sponge, they absorb moisture and when they freeze the cluster is under ice that melts and freezes with the changes of temperature.

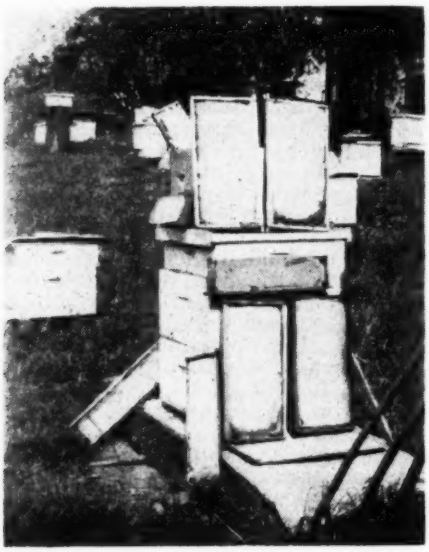
The Value of Sunshine

Langstroth was in favor of "thin hives" (meaning single walled) because they would allow an occasional mid-winter sunshine to penetrate to the cluster and thus enable it to move over to fresh stores. See page 418 last issue.

The Pendulum May Swing Too Far

It is apparent again that the inside as well as the outside of a bee hive should receive attention from the beekeepers for best wintering. Packing around the hives will be needed in many localities, especially during the very severe winters, not only to save stores but to prevent too rapid changes of temperature surrounding the cluster of bees. It goes back to the old saying that the pendulum often swings too far but I think I can safely say that excessive packing has been proven a mistake in practically all cases.

From the Field of Experience



This picture was taken in July and shows some of the nice combs of honey we obtained this season.

GOOD CROP IN MISSISSIPPI

By W. P. Kinard

The bees have had a bountiful harvest this season, here. The general flow began around May 25, and from one source or another it has been continuous up to August 15th. Even "King Cotton" came all out for victory, giving the first flow this year since 1941. On July 25th, I witnessed bees eagerly gathering from black walnut trees. During more than 30 years with the bees this was my first time to observe a flow from walnut trees.

Louisville, Miss.

CARRYING VS. HAULING BEES TO CELLAR

By M. J. Deyell

Some years ago we wintered bees in a large underground cellar 60′ x 12′ x 6½′. Owing to the peculiar location of the cellar it semed necessary to haul the colonies to our warehouse, then truck them through the building and down an elevator into the cellar. Such rough handling appeared to disturb the bees unduly. The consensus of opinion is that colonies should be carried carefully into their winter repository.

Just recently I ran onto a record of an experiment tried 22 years ago. Twenty colonies of apparently equal strength were carefully weighed just before being put into the bee cellar on November 24, 1923. Ten of the colonies were hauled to the cellar and ten were carried in carefully. The bees were removed from the cellar on April 17 of the following spring, and again weighed. The colonies hauled to the cellar showed an average loss of 10 3/20 pounds and two of the colonies were practically dead. The colonies carried to the cellar showed an average loss of 8 17/20 pounds, or, 1 3/10 pounds per hive less than those hauled.

The moral seems to be: **Handle bees carefully while putting them into the cellar.**

In northern regions where cellar wintering is practiced it is usually possible to carry hives to the cellar. Some have a cellar convenient for each apiary, which is ideal. Others have one large cellar for a number of yards, in which case the bees are hauled in and placed near the cellar temporarily.

There are usually one or more warm days in late November that enable bees to have a good flight. They should be carried into the cellar following a flight. The cellar should be dark, with some ventilation, but not too much. The top of the cellar should be below the frost line to help insure an even winter temperature for the bees. For good wintering, colonies should be strong, with good quality stores, the entrances of the hives left open and the temperature of the cellar should range between 40° and 50° F.

INSIDE AND OUTSIDE WINTERING

By E. S. Miller

For many years I wintered one-story colonies in cellars. Winter losses were negligible and stores consumed much less than when wintered outside. Colonies were slower in building up in spring for the reason that queens usually do not begin laying until after being taken from the cellar.

Our cellars were constructed entirely below the ground surface with concrete walls and floor with sawdust packing between joists of the floor above. Ventilation was provided by means of a chimney extending up from the cellar floor about 25 feet through the honey house. A full 7/8 inch entrance was left open and a small opening provided at the top of the hive. The cellars, of course, were kept entirely dark during the time of wintering and no artificial heat was used. The bees were taken out about March 15 or as soon thereafter as weather conditions would permit.

Cellar temperature should be kept as nearly constant as possible at 45 degrees Fahrenheit. A cellar 16x20 x7 ft. high is about right for 100 colonies. If too many are kept in a given space, temperature is apt to run too high at times and bees become restless; if too few colonies, temperature may fall so low that dampness results. Unless a bee cellar is properly constructed and kept constantly at the right temperature, it would be better to winter outdoors.

In the last five years I have had very good success with outside wintering in two-story hives, using top and bottom ventilation, plenty of stores, young queens, adequate yard protection, and no packing or wrapping. The bees were left on summer stands and no attempt was made to carry over any colonies except those that were strong and in prime condition. No winter losses have occurred in the last two years although many other beekeepers hereabout report heavy losses. Probably twice as much honey is consumed by the bees in winter but they start brood rearing earlier than when wintered inside and build up stronger for the early honey flow.

Outdoor wintering saves a considerable amount of labor in carrying bees in and out of the cellar. In this locality, near the southern end of Lake Michigan, as well as farther south, it would seem that outdoor wintering, if proper conditions are complied with, is to be preferred, especially if the labor and expense of packing can be eliminated.

Valparaiso, Indiana

PRODUCING AND SELLING EXTRACTED HONEY

By A. W. Kruse

Two years ago I shifted over to the production of extracted honey entirely. There is a very good demand for strained honey and I never have experienced any difficulty in disposing of our surplus crop, in fact, I never have enough to go around. I think there is less labor involved in extracted honey production and no wastage. Any good colony of bees will produce more honey in frames than sections, and you have the drawn comb for the next year which is quite an item.

I have always been very careful in handling honey, especially heating. Overheating can easily ruin the best honey. I never remove honey that is not thoroughly ripened from the hives. Nothing will discourage a sale quicker than poor quality honey.

Des Moines, Ia.

ONE MAN'S OPINION

Recently I have seen an advertisement in several agricultural publications that seems to fit right into the beekeeping business. The advertisement is by the Atlantic Commission Company, Inc., who apparently are the purchasing agents for the Great Atlantic and Pacific Tea Company.

They have listed nine points for the betterment of the agricultural producer, regardless of what his crops may be. They call it "Nine Proven Methods for Increasing Demand for Farm Produce." Here they are, with my comment:

1: Emphasizing production of the varieties and quality consumers prefer. (That means to "Give 'em what they like." Light, amber, or dark, it makes no difference. All honeys are good to those who like that flavor.)

2: Reducing waste and spoilage on the farm, in transportation, in the warehouses, in the stores and in the homes. (No comment on that one. I wouldn't try to gild the lily.)

3: Improving grading, packaging, and refrigeration methods. (I couldn't improve that one either.)

4: Developing the chemurgic possibilities of the plants and foods which do not now go into human consumption but may have a farm value when utilized for animal feeds and industrial uses. (That means that you should find some other way of getting rid of that burned, poor grade, crankcase drainings that some of you sell as honey.)

5: Improving transportation, warehouse, and marketing facilities. (See what I have to say about this later.)

6: Adopting better display, advertising, and merchandising practices. (Ditto.)

7: Streamline distribution, eliminating unnecessary in-between handling costs, and routing produce as directly as possible from farm to housewife's kitchen. (Still ditto.)

8: Increasing and improving facilities to supply growers with marketing information. (You'll have to wait on that one, too.)

9: Improving and increasing where needed, canning and processing plants. (That applies to all of us, producer, small packer, and larger packer.)

Now for the sermon. It won't be long.

You'll all agree that all of the above is true, but most of you feel that the other fellow should do it first. How many of you are crazy enough to think that such a program could be put over with every beekeeper living in his own little world. Every beekeeper, big or little, whether he has one colony or twenty thousand colonies, would benefit if there were a unified effort made to put over such a program.

Stop crabbing about the lack of cooperation between the various branches of the honey business, and do something about it. There is room for all of us, and there is a necessity for every phase of the business, from package bees to the big and little middlemen who assemble lots, process the honey, and distribute it. Stop worrying about what the other fellow makes from your efforts. If he did not serve a useful purpose he would not be in business. Inequities such as the difference between what the beekeeper gets for his honey and what it sells for on the grocer's shelves have a way of ironing themselves out. Survival of the fittest is still the first rule of nature, and if somebody is smart enough to do what you should do for yourself, then why crab about his enterprise.

The American Honey Institute, with its limited resources, cannot think about much more than No. 6 of the above. The National Federation is trying to cover the other eight points, with resources that are even more limited.

If you fellows will get over the thought that contributions to, and membership in, these organizations is providing easy jobs for a few people, and if you would get through your skulls the idea that the old proverb is still true—"In unity there is strength"—we might get somewhere.

Instead of complaining, you have a chance to do something about it. Remember it's your business. It is the honey that you are going to sell in the future that will be your living in the future.

SECOND GLANCES

By C. M. Isaacson

Not in the paper is the fine October day outside—and the World Series game broadcast coming out of the radio downstairs. So if this month's lines have a flavor all their own, perhaps Gleanings' readers will understand and excuse!

Honey production in Alberta seems to center quite largely on the problem of wintering versus packages (page 409). With queen supersedure in package established colonies on the increase, and the difficulty in obtaining packages on time in any case, the desirability of wintering over colonies has increased (having had a disastrous experience with one lot of packages this spring, I can testify to that desirability for this locality also—altho I have had some very good packages in the past). The upper entrance, young queens, wind protection mentioned along with wrapping or packing cases of some kind are all good, but the amount of stores mentioned (50 lbs.) is coming to be regarded as insufficient by many. Development of a strain of bees suited to each locality is a project worth following in any section. We are too apt to think that "bees are bees" regardless.

Instinct not Intelligence. That is the substance of Allen Latham's article (page 413), and of course he is correct. And as he says, the presence of that instinct in each succeeding generation is the more wonderful—until (I would say) one connects it with the Higher Intelligence back of all. He is certainly right also in the observation that bees build tender and fragile combs in proportion to the intensity of the honeyflow. Anyone who has produced comb honey and observed carefully will have noticed this.

Wax production has been important these past years. Clarence Tontz relates several incidents whereby extra wax seems to have been produced at no apparent sacrifice of surplus honey. Will bees sometimes work harder just to complete unfinished comb? Perhaps. but of course in a real dearth of nectar, foundation is gnawed badly as a rule. And a brood chamber is usually a poor place to obtain really good drawn comb in my own experience (page 414).

Florida beekeeping certainly follows Doolittle's advice of "millions in our house" if Mr. Burrows' procedure is a good example. Good queens—then honey and more honey. It is a good method—his results (and those of many others) are ample proof. (page 417).

Upward ventilation, which we have "discovered" (again) in recent years was a well known principle to Langstroth and those other pioneers of his time (page 418). If Editor Root's series of "Eighty Years Among the Bees" had done nothing else, it has certainly made us realize how much we owe to those beekeepers of years ago—without our realizing our debt in our joy of rediscovery.

Extreme top entrance or middle —it seems to matter little if colonies are properly prepared otherwise, although the tendency in this locality of late is towards a middle opening. Both eliminate considerable moisture, both provide a flight chance when snow covers a bottom opening. As to a straw (and paper) pack versus paper wrapping alone, it seems to depend on individual experience. I know of at least one beekeeper who has gone back to light straw protection on sides after trials of having it only on top (page 420).

A queen excluder is of definite value in obtaining well filled upper brood chambers for wintering—especially with ten-frame equipment (page 421). And that one sentence of Bro. Frederick's tells a large story —" a strong colony with plenty of good honey is hard to kill." It is.

Bees not harmed by DDT. Such seems to be the consensus of reports now coming in (page 429). It has been already known that some insects are definitely resistant to this remarkable material—perhaps honeybees are among them.

Honey is in demand now. Will that demand continue? The work of the American Honey Institute has been a big factor in making an answer of "yes" possible. Our support has paid out well—and will continue to do so. Just an additional word—that "honey" pocket calendar, isn't that a natural for distribution this fall? Let's use them.

Middle River, Minnesota

Asked and Answered

Will Aster Honey Cause Fermentation?

Question.—The wild aster honey flow is about to begin here in Maryland. (September 18) and the honey crop is still on part of the hives. Will it cause fermentation if extracted with the balance of the early honey (mostly clover)?—Wm. W. Walsh, Md.

Answer.—Honey gathered from wild aster if properly ripened by the bees is not likely to ferment. It sometimes happens, however, that the aster honey flow, occurring late in the fall, may be followed by cold weather which prevents the bees from curing or ripening the honey properly. If this happens, fermentation may occur. It may be necessary to heat the honey after it is extracted to a temperature of 160 degrees Fahrenheit in order to drive off the excess moisture. To do this, cans of honey should be placed in a boiler of water over a hot plate, the containers resting on a couple of sticks to keep the bottom of the honey container from coming in direct contact with the bottom of the boiler. The honey should be kept at the designated temperature for about fifteen or twenty minutes, then cooled.

Putting a Swarm With Another Colony

Question.—If I shake a swarm of bees back into the colony from whence it came 24 hours before, what will happen? Will they fight or swarm? If I shake them into a strange hive of bees what will happen?—E. C. Baldwin, Conn.

Answer.—You can shake a swarm of bees back into the colony from whence it came but you will have to destroy all queen cells if you decide to keep the old queen. You can shake the swarm into another colony toward night, if it is cool, but watch the bees for a little while and if they do not fight, all will be well. Otherwise, smoke the bees, putting a little tobacco in the smoker.

Moving Bees a Short Distance

Question.—How and when can I move my colony about 50 yards to a new location?—A. E. Varker, Tenn.

Answer.—Wait until cool weather comes before moving your hive of bees a distance of fifty yards. Moving should be done late in the evening, after all the bees are in. Simply transport the hive to its new location, then put some pieces of brush or other such objects over the entrance of the hive, loosely, so that when the bees fly out of the hive the following morning they may notice the difference in the appearance of their new location and thus mark this new location. A few of the old bees may fly back to the old location but not finding any hive to enter, they may circle around in the air a few times and return to the new location. Be sure not to leave any hive or semblance of a hive on the old location or some of the old bees are likely to enter it.

Handling Smartweed Honey

Question.—There is a lot of smartweed honey here this fall and some is not ripe or capped over. How can we keep it from getting sour?—J. V. Hauerth, Kans.

Answer.—Smartweed, sometimes called heartsease, is prevalent over much of the country this fall. This condition is doubtless due to copious rains that occurred earlier in the season. When the weather is hot, honey that has been on hives a few weeks, even if not thoroughly capped over, is likely to be quite well ripened. However, during wet weather uncapped honey, as a rule, should not be removed from hives to be extracted. If the weather has been hot and dry in your locality, it would seem safe to remove the honey for extraction. Should wet weather continue late into the fall it may be necessary after the honey has been extracted, to heat it to a temperature of 160 degrees for at least 15 minutes to help drive off excess moisture. This may be done by placing the containers of honey in hot water, stirring the honey when it is heated.

What Size Mating Hive

Question.—What are the minimum dimensions of a hive that should be used as a nucleus for the mating of queens, also the minimum number or weight of the bees for same?—J. M. Byrd, Texas.

Answer.—Hives for mating queens have been made quite small, in fact, some queen breeders a few years ago used a small box about the size of a comb honey section. A good sized spoonful of bees were put into this small hive, just before the virgin queen was given. Those who have used these small hives say they work well, especially during the height of the season when the weather is warm. A few years ago

when we reared queens here in Medina we used the five frame nuclei with standard sized combs. A regular ten frame standard hive, with a tight fitting division board, leaving space for four or five combs on each side, with the entrances facing in opposite directions was used. As a matter of fact, we are now using some of these hives for rearing queens during the honey flow in our commercial apiaries. The advantage with this type of hive is that the dimensions of the frames are standard and the nuclei can be carried through the winter, especially here in the North, if placed in a bee cellar. In your state such nuclei could be wintered out of doors. In stocking these double mating hives in the spring, when queen cells are ripe, we put about one-half pound of bees into each side. The bees are wet down in a hive body then scooped into the hive with a dipper.

The Mating of Queen and Drone

Question.—Last Monday afternoon, between 3:00 and 4:00 p. m. I was watering a strip of garden along the fence on the South side of the yard, and was half turned around to drag the hose farther along when I was attracted by a fierce buzzing. I saw two large bees attached, shoot down from the sky over the fence from the south side. They hit the lawn, rolled over, and made off and up over the top of a tree in the next yard (north), and so out of sight. What a noise they made in the quiet yard! I wondered if both were flying. I had an impulse to turn the hose on them and capture them; but I didn't take my eyes off them, and it was all over swiftly before I could have got completely turned around. For several seasons I had the care of an apiary—up to 24 colonies, well loaded with supers—at the old Theosophical Homestead on Point Loma, and so know my bees. Maeterlinck says in "The Life of the Bee" that the nuptial flight is into the empyrean and, in the nature of the case, has never been witnessed by mortal eyes. I wonder if anyone has ever witnessed even such a momentary glimpse as I had; for that it was part of the nuptial flight I am certain.—Walter J. Renshaw, Calif.

Answer.—There is no doubt but that you actually saw a honeybee queen and a drone in mating flight. It was an unusual experience to observe them land in the grass and then rise again, probably to land the second or third time, when the queen and drone would separate, the queen absorbing the organs of the drone and the drone then dying instantly. The mating act has been seen in the air by numerous observers, and it is all in line with what you saw. There was one man in particular, Mr. Mel Pritchard, who raised thousands of queens during his lifetime, who repeatedly saw the queens and drones flying in the air, then drop down in the grass. Usually the drone was separated from the queen at the moment of her release, and was dying. It is very apparent that the drone dies in the act of mating, either before he is separated or immediately after copulation takes place. Late work shows that the queen may meet the drone not once but two or three times before she gets down to regular egg-laying.

Should Cells Built After a Queen is Introduced be Destroyed?

Question.—I introduced several queens and upon opening the hive about a week later all the colonies had accepted the queens and they were laying nicely. However, upon looking through the hives about 30 days later I found in one hive not only the clipped queen which I introduced but also another young queen. Both the queens were laying and I found them both on the same comb although on opposite sides. In introducing queens my bees always build queen cells even when they accept the queen, but this is the first time I have ever had a young queen emerge and commence laying while the queen I introduced was present. I sometimes destroy these cells and sometimes leave them according to how much time I have. I wonder if these cells should always be destroyed provided the queen I introduce is accepted.—R. E. Arrington, Virginia.

Answer.—It seems apparent that one of the queens you introduced recently did not meet the approval of the bees in that hive, so they permitted one of the queen cells that was developed after the queen was introduced, to mature and to produce a young laying queen. It seems very possible that this young queen may eventually hold forth as mother of the colony and the other queen that you introduced may be disposed of, in due time. Of course we cannot say for a certainty that this will happen. We are simply saying that it may happen. It is somewhat of a problem to know whether or not to destroy queen cells that are sometimes developed after queens are introduced, or to let them go and permit the bees to destroy them. When we have occasion to examine colonies about eight or nine days after queens are introduced, as we frequently do, we make it a point to destroy all such cells, provided, of course, the queens introduced appear to be doing good work. We shall appreciate opinions and experiences along this line from our readers.

Editorials

Regarding DDT still no further reports of bee losses from its use have come in. We must remember that this insecticide is only slightly soluble in water. Bees often, when nearby water is not available, will take water from bloom sprayed with arsenicals soluble in water. DDT, on the other hand, is soluble only in oil and bees will not go near oil. Oil does not evaporate like water and an oil spray will last longer than a water spray, making only one or at the most, two sprays necessary. This will be explained more fully later.

Cellar-wintered bees use less stores than the outdoor bees packed or unpacked for winter. But, as pointed out by E. S. Miller, page 463, this issue, they raise little or no brood and are generally behind the outdoor wintered colonies in honey production. Some twenty years ago this fact was so apparent that cellar wintering has almost been discontinued except in very cold localities. By the same token packed colonies use less stores than the unpacked and may have less brood and bees in the spring. (See page 460.) The amount of brood rearing in February, March, and April may determine the size of the honey crop.

The 1945 Honey Crop According to a report issued on October 8, 1945, by the Bureau of Agricultural Economics, Washington, D. C., the prospective honey crop in the United States for 1945 is 225,779,000 pounds, which is 20 per cent above last year and 16 per cent above the 5-year (1939-'43) average. The production per colony averaged 41.3 pounds this year compared with 36.2 pounds last year. The number of colonies this year totaled 5,466,000, an increase of 24 per cent over the number in 1939.

Don't Underestimate Winter Stores In most regions populous colonies store a considerable amount of pollen in combs of the brood chamber during the late summer and fall months. The bees pack the pollen into the combs until the cells are about half filled, then later on honey is stored over the pollen and the honey is sealed over. What a marvelous provision to insure a supply of pollen for use the following spring for brood rearing before early pollen plants are yielding, or, during spells of cold, rainy weather.

When estimating the amount of honey in each hive for winter stores it is easy to assume that most of the sealed combs contain honey, when, as a matter of fact, they may contain a considerable amount of pollen. Due allowance should be made for pollen. Some authorities say a populous colony should have the equivalent of five or six combs of pollen late in the fall.

Those who winter in two-story 10-frame hives should have each colony weigh at least 130 pounds late in the fall. If, perchance, all of this honey is not used up by the time the major flow begins the following season, the honey is not lost. It is insurance against starvation and helps to develop populous colonies that should store the maximum crop of surplus honey.

Honey Flow in November A few years ago a commercial beekeeper, L. R. Stewart, of Newport, Indiana, experienced a major honey flow in early November from wild cucumber. This plant secretes nectar late in the season and appears to be at its best during cloudy weather. Mr. Stewart said that at the time the late flow occurred he had taken off most of the supers. The honey came in so rapidly that it was necessary to put on more supers. A considerable amount of surplus cucumber honey was stored.

As a rule, cold weather sets in directly after the last warm spell. With the large amount of unsealed honey, it is difficult for bees to drive off the excess moisture from the nectar, as they normally do when the weather is warm. If the winter is long and cold and very few winter flights are possible there is likely to be a considerable winter loss. On the other hand, when bees get frequent flights they are likely to winter quite well.

In the vicinity of Medina, we have had late flows from aster during October. During the fall of 1939 bees whitened combs the third week in October and stored a surplus.

One Cause of Early Supersedure In this issue page 234, is an obituary notice of Mr. Morley Pettit. Near the close of that sketch, we refer to a cause of early supersedure of queens of package bees. It has become more and more common to install packages by pouring syrup all over the cage and of course all over the bees, and the queen, if she is inside of the cage. While beekeepers who have tried this say they see no ill effects, Mr. Pettit, it will be noted, preferred to put his packages on **combs of sealed honey** without any dousing of syrup and found he had very little trouble from supersedure. It is an easy way to install package bees but the writer has felt that it was somewhat of a doubtful procedure to put the bees in a state of suffocation until they could lick themselves off.

Wintering Queens in Nuclei We are frequently asked whether or not it is possible to carry queens over the winter, in nuclei, in order to have them on hand next spring, when needed. Attempts have been made to winter small colonies with young queens, outdoors, also in a bee cellar.

It will be noted from the article in this issue by C. B. Gooderham of Ottawa, Canada, page 454, that it is possible and feasible to winter nuclei in that section of the country. It will be noted that the hives are well packed and that the nuclei are established quite early in the season so that there will be an abundance of young bees in the fall and ample stores properly placed. These two requirements are essential.

Some years ago we wintered queens in nuclei. The hives consisted of 10-frame standard bodies divided in the middle with a tight fitting division board, four or five combs on each side of the division board, the entrances facing in opposite directions. We were fairly successful in this venture. However, in some cases the nuclei were so weak early in the spring, that something had to be done to save the queens. It was usually necessary to add a pound or two of bees to each weak nucleus.

During the season of 1944 we had quite a number of nuclei in the double queen mating hives. They were pictured on the front cover page of the February, 1945, Gleanings. As stated at that time we had planned to put them in our bee cellar, but unfortunately the cellar was filled with other equipment and the bees had to remain outside. Had the winter been reasonably mild, a large percentage of the nuclei would have come through alive. As it was, the long cold winter caused a loss.

Mr. Nolan of the United States Bee Culture Laboratory, Beltsville, Md. has wintered four two-frame nuclei, separated by screens, on top of a full colony out of doors. Each nucleus had its own small entrance and the entrances faced in different directions. We tried this at Medina but were not successful.

As time goes on it may be possible to winter young laying queens with a greater degree of success than has yet been attained. It is very convenient to have young queens on hand, to replace worthless queens or to requeen colonies that have lost their queens.

National Federation Has New Secretary-Treasurer Our National Federation of State Beekeepers' Association organized at the Chicago meeting in 1943 is making progress. Our industry needs to be knit together by such an organization, especially at this time when the honeybee plays such an important part in agriculture, and honey is in such great demand. Our country needs more bees and more honey.

As will be recalled, John W. Holzberlein, Grand Valley, Colorado, is President; Woodrow Miller, Colton, California, vice-president, and Glenn O. Jones, Atlantic, Iowa, is the new Secretary-Treasurer. He recently succeeded V. G. Milum, Champaign, Illinois, who because of his heavy schedule at the University, asked to be relieved of this office.

A word of appreciation is due Prof. Milum for his untiring efforts in behalf of the Federation, also, our best wishes to Mr. Jones in the job he is undertaking. He is qualified to render a worthwhile service and we urge beekeepers over the country to give him wholehearted cooperation. It is hoped that the membership which now stands at approximately 500 individual members at $5.00 each, 36 State Associations, and six county associations, representing many hundreds of beekeepers, may continue to grow.

The Passing of Morley Pettit

By E. R. Root

Morley Pettit

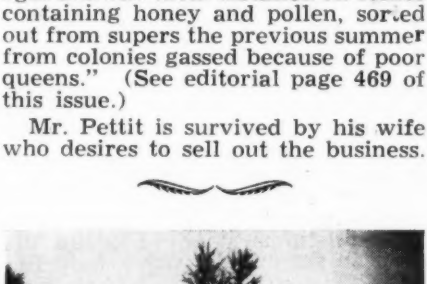
Just as we were going to press with the October number, we received a wire announcing the death of the 70-year-old veteran, Morley Pettit, at his southern home in Tifton, Georgia, on September 13, due to heart failure. He was one of the leading producers of honey and package bees, both in Canada and the United States. He was a lovable and likable man who lived the standards of the Golden Rule all through life. He was well equipped for his work because of his previous training as a university man, and as Provincial Apiarist at the Agricultural College at Guelph, Ontario, Canada, for a number of years. Ill health compelled him to drop this work and to take up an outdoor life of beekeeping for which he had had previous training from his father, S. T. Pettit, a writer on bees in the early days of the 90's.

In 1916, while a honey producer in Ontario, Mr. Pettit bought his first package bees and with them broke all of his previous records in a honey crop. This turned his thoughts toward the Southland. It filled his mind with the idea of having some bees down South where the sun always shines and where it never snows. Since producing honey in the North left him free in the winter, it was natural for him to conclude that bees could be kept at both places, so therefore, he migrated with the birds. Accordingly, he went South in February, 1923, and has spent his winters there ever since, also his summers since Pearl Harbor. But it took a depression in honey prices to force him into raising package bees and queens. For twenty years he has been a producer of package bees and queens. It goes without saying that he put his scientific training into his work. He built up a large business.

Our readers will remember the articles that he wrote from time to time, especially the last one that appeared in February of this year, page 41, where he told very frankly of some of the difficulties of the package producer and his methods that he employed which brought him a large volume of business. In this article he spoke not only from the standpoint of the consignee but of the shipper.

In explaining the heavy loss of queens through supersedure from package bees he told the true story of the rich beekeeper who could afford to feed his packages lavishly and the poor one who gave them just enough to get by. They both received packages from the same shipper on the same date. The poor man had grand success with his queens while the other lost most of them. He concludes by saying: "I have used many of my own packages and had them installed on combs containing honey and pollen, sorted out from supers the previous summer from colonies gassed because of poor queens." (See editorial page 469 of this issue.)

Mr. Pettit is survived by his wife who desires to sell out the business.



British Columbia also has skyscrapers. The apiary of Thos. Johnstone, Vancouver, B. C. proves this. The picture was taken in the clover area in August, 1943.

Spinster Jane Says

Of all the topsy-turvy years, 1945 has proven the cap sheaf: Summer weather in March, winter in June, frost in August, hot summer weather in early September, and with the coming of this new moon, here we are experiencing a veritable rainy season. Today rain persists, along with a bit of thunder for good measure.

Can these possibly be our equinoctial storms we are getting? I had thought that with so little spring warmth and sunshine, old Mother Nature might relent and give us a prolonged summer, but all signs say, "Better watch out for frost after so much rain!"

Imagine beginning extracting honey the first week in September, yet that is just what we did. The bees were as queer as the weather. They got their dates mixed, and refused to finish up one job at a time. They were so busy garnering nectar they didn't cap what they had already stored, and that was the cause of our delay.

Fully Capped Honey in One Tank, Partially Ripened in Another

Our bees did a fairly good job this season, taking weather conditions into consideration. Twenty of our best hives yielded close to a hundred pounds per colony, yet none of it could be sold as pure clover honey, due to lateness in extracting, due again to lateness in capping. Boy simply ran all fully capped honey into one tank, all partially capped honey into a second one, to speed up matters a bit.

All our honey is consequently amber colored, all of it is mild flavored. The clover honey tempers both grades, and the only thing necessary now is to give the uncapped variety to those who will use it up at once. We do not think it sufficiently ripened to keep for any length of time.

For our part, here at home, we choose this kind, and because of the sugar shortage, it is a real blessing. In pumpkin pies it brings out the delicious pumpkin flavor, for though a great deal of it is dark honey, there isn't a least taste of buckwheat. This latter is not good for baking, to suit our taste. Our honey makes a pumpkin pie fit for your President's taste. And one other use for our honey:

At our Women's Institute meeting, each member was asked to donate a bottle of pickles. Some lady was to be chosen auctioneer to auction these off, and the proceeds were to go to the W. I. treasury. Well, I had no sugar, and no cucumbers. What was to be done! Undaunted, I sliced green tomatoes and onions, used celery seed and mustard seed as seasoning, colored with a bit of turmeric, sweetened with honey, and there we were with a delicious pickle, which I named "Honey Sweet Tomato Pickle." These tiny jars, not a pint in size, sold for 50c each. And was I delighted! Truly, "Necessity is the mother of invention."

One of our returned soldier-boys called with his mother for honey. I sent him to the honey-house to chat with Boy, but he demurred. He was afraid of being stung. And how I laughed! He was never afraid to face the Germans with their rifles and bombs, but to face a little honeybee! That was another story. But would you believe it he finally went, and he didn't get stung even once.

STRANGE FACTS
ABOUT BEES
THAT OUGHTA MAKE US SAFE!
J. BISHOP
IN 484 B.C. THE TURKS USED BEHIVES TO THWART HOSTILE CROSSINGS OF THE DANUBE.

Just News

The Lehigh Valley Beekeepers' Association is holding its autumn indoor meeting at West Hall, Twenty-sixth and Gordon streets, Muhlenberg College, Allentown, Pennsylvania, on November 15, at 7:30 p. m.—E. B. Everitt.

The Arkansas Beekeepers' Association will meet in Little Rock on November 26.

The New Rochelle Beekeepers' Association will hold its regular meeting at the home of Mr. and Mrs Justus Lorenzen, 45 Clark St., Yonkers, N. Y. on Nov. 18, at 2:30 p.m.

The Worcester County Beekeepers' Association will meet in the Museum of Natural History, 12 State Street, Worcester, Mass., on November 17, at 7:30 p.m.—H. B. Poole.

O. P. A. SUSPENDS BEESWAX CEILING

As we go to press we have been reliably informed that the O. P. A. intends to suspend M.P.R. 264 covering vegetable wax and beeswax ceiling prices effective October 24 pending approval from the Department of Agriculture. It appears that this action will go through without any delay covering all foreign purchases and domestic sales of these waxes.

It is generally the policy of the O. P. A. to release those items from price control where the supply appears in reasonable balance with the demand. In recent weeks stocks of beeswax have tended to increase and it is believed that for the present no great change in price either up or down will result from this action.

Beekeepers Moving to Texas Take Notice — Beekeepers who plan to move or ship colonies or equipment into Texas must make application to the State Entomologist, College Station, Texas, in advance and send their certificate or a certified copy with their application before a regular permit will be issued. Certain locations are crowded and it has become necessary to take greater precautions to guard against introduction and spread of American foulbrood.—F. L. Thomas, State Entomologist.

The National Federation meeting is scheduled, tentatively, for January 15 to 17, 1946, in Chicago.

The annual meeting of the Montana State Beekeepers' Association will be held in Billings, Montana, on Nov. 15 and 16.—Mrs. O. R. Burdett,—Sec. -Treas.

The Indiana State Beekeepers' Annual Convention will be held in the State House, Indianapolis, November 15.

The Southern Federation, the Georgia Beekeepers' Association and the **Florida Beekeepers' Association** will meet in a 2-day session at Valdosta, Georgia on December 13 and 14.—W. H. Yarbrough, Sec.

Correction in October, 1945, Gleanings: On page 430, second column, 29th line, the word **lower** should be **higher.**

A new British Bee Book, entitled **"Bees and Honey,"** by George A. Carter, published by Bee Craft, appeared recently. While intended primarily for British beekeepers, it contains much useful information that may be applied in other countries. Various subjects, such as apiary management, harvesting the crop, disease control, photosynthesis in connection with nectar secretion, wax, wintering, and numerous other topics, such as the chemistry of honey, are included. As might be expected, the book has a special appeal to the back lot beekeeper but is nevertheless of interest to the commercial producer as well. The book sells for 4 shillings net and may be procured from A. G. Smith, Bracken Dene, Manor Way, Petts Wood, Kent, England.

The Oregon State Beekeepers' Association will hold its annual meeting in the Public Service Building, Portland, on Dec. 7 and 8.

The Illinois State Beekeepers' Association will hold its 1945 Convention on Nov. 9 and 10 at St. Nicholas Hotel, Springfield, Ills. Banquet evening of the 9th.—Hoyt Taylor, Sec.

WASHINGTON NEWS

(Excerpt from Federation News Letter for October, 1945, by Glenn O. Jones)

Mr. Harold J. Clay is in position to keep currently informed on Government rules and regulations concerning the beekeeping industry and he was asked to give, through this medium, his opinion as to possible changes in these rules and regulations in the immediate future.

He sends the following as a reasonable guess:

"1. The OPA price ceiling control over honey is likely to continue as long as sugar remains scarce. I shall be surprised if price ceilings on honey are removed before the end of the present fiscal year—and perhaps not then.

2. Similarly the War Food use—limitation order on honey, WFO 47 and 47.1, should remain in effect as long as sugar and other sweetening agents are scarce. Otherwise, the already small supply of honey available for bakers and other industrial users who have authorized quotas will be cut still further.

3. Regulations concerning containers are now nearly all relaxed, and all probably will be before long. For some time to come, however, both glass jars and tin pails will be scarce.

4. The Office of Price Adminstration has been so impressed with the essential nature of bees in connection with pollination that I do not believe there will be any lessening of the present authorization of sugar for bee feeding. That is, as you know, 10 pounds per colony per year without authorization other than signing the OPA Form R-315; and up to an additional 15 pounds upon securing a statement from the local AAA committee that bees would starve without additional food. Even with these certificates, beekeepers in some sections may find it difficult to locate sugar to cover their authorizations. In cases where beekeepers can use a full carload of sugar in an area and pool their requirements to justify it, OPA may authorize the routing of cars of sugar to those sections to take care of that need.

5. Western Pine for use in making beehives will continue scarce for some months to come, and metal for making extractors and other equipment may also be difficult to secure in the quantity needed. It can be expected, however, that the supply situation will improve materially before the beginning of another season.

SEED AND HONEY PRODUCERS URGE RESEARCH

The following press release, dated October 10, 1945, by the National Council of Farmers' Cooperatives is so important to the beekeeping industry that it warrants publication in full. The decreased legume seed production which threatens the country's soil conservation concerns not only farmers and those in the government responsible for the food supply of this country but honey producers also have a vital stake in the outcome of this effort to counteract the downward trend of legume seed production.

To date far too little is known of the importance of the bee in seed production and much research will be required to obtain the greatest results from the present bee population.

This proposal has been directed to the Honorable Harold D. Smith, Director, Bureau of the Budget in Washington. If favorably acted upon by the Director of the Budget it will be submitted to Congress for their approval.

HALF MILLION ASKED FOR LEGUME SEED RESEARCH

Washington, D. C., Oct. 10—Half a million dollars annually must be appropriated for a comprehensive research program on seed for improved legumes or a high level of nutrition for the American people cannot be achieved, representatives of farm and trade organizations told Harold D. Smith, director of the Bureau of the Budget, today.

R. D. Lewis, chairman of the Department of Agronomy, Ohio State University, Columbus, testified that "Supplies of seeds of legumes have declined dangerously during recent years."

The entire group agreed that the time has come for the inauguration, by the U. S. Department of Agriculture and cooperating state agricultural experiment stations, of comprehensive and correlated research programs, which should include the following:

"1. Development by modern methods of plant breeding of hardy, high yielding, disease resistant, insect resistant, and regionally adapted varieties of major soil-building and forage legumes.

"2. Ways and means of making seed production a regular and less hazardous enterprise.

"3. The relationships of insects to pollination and setting of seed in principal legumes."

Groups submitting the request for the $500,000 annual seed research fund were: Roger J. O'Donnell, Executive Secretary, American Seed Trade Association, Chicago, Illinois; Stanley Folsom, Chairman of Research Committee, Field Seed Institute of North America, Milwaukee, Wisconsin; C. S. Garrison, Director, International Crop Improvement Assn., West Lafayette, Indiana; John H. Davis, Executive Secretary, National Council of Farmer Cooperatives, Washington, D. C.; Roy Herr, Director, National Federation of State Beekeepers' Associations, Lancaster, Pennsylvania; Fred Bailey, Legislative Counsel, National Grange Washington, D. C.; Harry B. Caldwell, Master, North Carolina State Grange, Greensboro, North Carolina; R. D. Lewis, Chairman, Department of Agronomy, Ohio State University, Columbus, Ohio.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY FOR SALE

Clover and amber honey in 60's. Alexander Co., 819 Reynolds, Toledo, Ohio.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairifeld Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—Fall aster honey, send price and sample. Robt. W. Lane, Greeneville, Tenn.

WANTED — Extracted honey, any amount. We pay cash. Lose Bros., 206 E. Jefferson, Louisville 2, Ky.

HONEY & BEESWAX. Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIF.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60 lb. cans furnished, if desired. W. R. Moomaw. Stone Creek, Ohio.

CLOVER HONEY WANTED—Top prices for extracted, section and shallow frame comb. Any quantity. State whether you can deliver. KEDASH BROTHERS, Chillicothe, Ohio.

HONEY WANTED—Have buyers for all grades and varieties packed in 60-lb. tins or barrels. Mail samples and state quantity. FOREIGN COMMODITIES CORPORATION, 100 Hudson Street, New York City.

WANTED—All grades honey, carloads or less. We pay ceiling prices in cash. Call for it or arrange shipment. Sell your honey to us and we will stick by you always. The Honeymoon Products Co., 39 East Henry St., River Rouge 18, Michigan.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Cal.

CLOVER HONEY WANTED—Large or small lots. Would like to establish permanent connections with several good producers. Ellsworth A. Meineke, Rt. 1, Arlington Heights, Ills.

HONEY WANTED—All Grades. Carloads or less. Also Beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

MR. BEEKEEPER: The ALEXANDER CO. of Toledo, Ohio, packers of the "Mayflower" brand fancy table honey wish to announce a larger postwar outlet for your product in the construction of their new building at the same location, 819 Reynolds Road on Route 20, Toledo, Ohio.

Our new building will incorporate the latest ideas in scientific and mechanical improvement for the processing, filtering, and packaging of honey, with a capacity of 10,000 lbs. every ten hours.

For years we have been a large packer of honey and now our production will increase many fold.

Mr. Beekeeper, you can have a part in the growth of this business, which some day will help you dispose of crops of honey not sought after as they are today. At that time we will help you, but now we need your help. We need honey—2,000,000 pounds of it—to keep our plant in operation, to fill our contracts. So, Mr. Beekeeper, sell your honey to the ALEXANDER COMPANY of Toledo, Ohio, a reputable firm of long standing—a firm with a known label brand and a permanent demand for its product.

Honey is not a sideline with us. It is our only line. We pack only your product, Mr. Beekeeper. We have no other lines to compete with honey. We pack honey only, and have honey only to advertise and sell. Our existence depends upon your production.

If you are near Toledo or can get gas for the trip, we are on Route 20 near Dorr St., Toledo, Ohio. We would like to show you our new plant.

REMEMBER, Mr. Beekeeper, our firm pays cash—does not ask you for time, and in all except distant cases, our truck will back right up to your door. So, don't sell your crop until you look at our bid. Write today for our information card and get the most possible for your honey crop. THE ALEXANDER COMPANY, 819 Reynolds Road, Toledo, Ohio.

FOR SALE

BEEKEEPER'S HOIST, $25.00, frt. prepaid in States. Turner Mfg. Co., Corning, Iowa.

QUEENBEE PAINTING outfits, $1.00 colony records, 10-15c postpaid. Southwick Apiaries, Waban, Massachusetts.

YOUR WAX WORKED into high quality medium brood foundation for 16c pound; 100 pounds, $12.00. Fred Peterson, Alden, Iowa.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

Dry skim milk, 35 cents a pound; 5 lbs., $1.25; Brewer's yeast, 40 cents a pound, 5 lbs., $1.50; Soy flour expeller, 10 lbs., $1.40. Write for prices in larger units. All prices F.O.B. M. Y. S. Company, Bainbridge, N. Y.

FOR SALE—Double and quadruple winter packing cases, substantially built, with metal covers. One 250-gallon tank, metal cover with screen support for strainer, not crated. $25.00 f.o.b. Ray C. Bish, Tiffin, O.

FOR SALE—500 hives of bees in Midwest, $8.00 per colony, mostly 10-frame, factory built with metal telescope covers, guaranteed clean. Preparing to go abroad. Must sell. Box 1045, Gleanings, Medina, O.

FOR SALE—Established package and queen business, located in Louisiana, over 500 colonies, over 1,000 nuc boxes, Chevrolet truck, miscellaneous bee supplies. Certificate of inspection furnished. Rapides Apiaries, Winnfield, La.

HONEY BUSINESS FOR SALE—65 two-story 18-frame colonies in Northern Michigan. Complete painted equipment for 10,000 pounds surplus. Insulated 16 x 24 foot concrete bee cellar, honey house overhead. Established market for honey. Health of bees guaranteed. Opportunity for younger person. Herbert M. Bachman, Hillman, Michigan.

FOR SALE—225 Modified Dadant 4-frame nuclei boxes, 175 Standard 5-frame boxes. Equipped with division boards to make two smaller units per box if desired, reversible screen covers suitable for trucking. $1.25 each. 20-frame radial handpower extractor, $35 O. A. Salge, Rt. 1, Box 261, Weslaco, Texas.

At Phillips, Wis. I have for sale, 1200 8-fr. standard hive bodies with frames, wired foundation and drawn combs; 300 covers; 300 bottom boards; 300 queen excluders; 1-4-fr. reversible extractor; 1 honey tank and other material. Used only two seasons. The first reasonable offer gets it. For further particulars write, Jasper Knight, Hayneville, Ala.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

WANTED - Extracted Honey All Kinds

One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.

JEWETT & SHERMAN COMPANY

Lisbon Rd. & Evins Ave., Cleveland 4, O.

1204 W. 12th St., Kansas City 7, Mo.

MICHIGAN CLOVER HONEY WANTED!

Buyer of MICHIGAN'S fine Clover Honey Michigan producers write me when you have some of this fine Michigan Clover honey ready for market.

Can use your entire crop. Don't forget, and write.

TOWNSEND SALES COMPANY

E. D. TOWNSEND

NORTHSTAR, MICHIGAN

CAUCASIANS

CARNIOLANS

Another queen and bee season has come to a close. We heartily thank our many customers. The demand for our queens was at times so great we could not quite keep up. We are planning to serve you a little better next season, both in quality and quantity.

Albert G. Hann, Glen Gardner, N. J.

We will book your orders for 1946 at prices in line with others in my section and guarantee you will be pleased. Write for prices and other details.

A. M. PEACH

Baldwyn, Miss.

Successful Package-Bee Business for Immediate Sale!

Owing to the death of owner, Mr. Morley Pettit, Shop, attractive modern home, 2 trucks, one a new International, and complete equipment, all in readiness for a big year in '46.

Mrs. Morley Pettit

Tifton, Georgia

PERFORMANCE
TELLS THE STORY!

Daughter queens of this "DR" strain of bees which has been bred continuously for resistance to AFB is giving satisfaction to an increased number of producers in every honey producing state.

BOOKING ORDERS FOR 1946.

WRITE FOR SHIPPING DATES.

Iowa Beekeepers Association

STATE HOUSE, DES MOINES, 19, IA.

THREE-BANDED ITALIANS!

Select Breeding - Good Equipment
Prompt Service!

We are booking orders now subject to prices for 1946 which we are preparing and will have ready at an early date. All indications point to a large demand for packages and queens. It is better to book early than be late.

Plan NOW to use OUR BEES next Spring!

Louis A. Couch

THE VILLAGE BEEKEEPER
PINEVILLE, LOUISIANA

YOUNG LAYING QUEENS!

We have them so long as weather permits shipping at one dollar each. Any number.

White Pine Bee Farms

Rockton, Pa.

The Home of Good Italian Queens

"HONEY GIRL" ITALIAN

	1 to 3	4 to 11	12 up
QUEENS	90c each	80c each	75c each

100 or more 70c each, will ship in lots to suit your needs.

Twenty odd years of selective breeding for hardiness, productivity and other qualities you will like when you stock "Honey Girl" Italians.

Queens received dead will be replaced if returned promptly in their own cage. Certificate of inspection with each shipment.

St. Romain's "Honey Girl" Apiaries
Moreauville, Louisiana

BEES AND QUEENS FOR SALE

GLEANINGS cannot guarantee that all bees advertised for sale in our classified columns are free from disease. We use all possible care in accepting advertisements but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, carefully raised, $1.00 each. D. W. Howell, Shellman, Georgia.

PACKAGE BEES, QUEENS — Italians, circular free. Crenshaw County Apiaries, Rutledge, Alabama.

BOOKING ORDERS—Caucasian package bees with queens. April and May, 1946, delivery. Lewis & Tillery Bee Co., Greenville, Ala.

THREE BANDED ITALIAN bees and queens for 1946. Booking orders now. Alamance Bee Co., Geo. E. Curtis, Mgr., Graham, N. C.

IMPROVED ITALIAN QUEENS, $1.00 from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Jr., Caldwell, Texas.

PACKAGE BEES with young laying Caucasian Queens for spring delivery. Booking orders now. Miller and Evans, Three Rivers, Texas, Rt. 1.

THE NORMA ROY APIARIES — Italian bees with queens for spring delivery: 2 lbs. with queen, $3.25; 3-lb. with queen, $4.00. Queenless packages, deduct 70c. No deposit required to book your order and reserve about the shipping date desired. Norma E. Roy & Son, Hessmer, Louisiana.

FOR SALE—About 200 colonies of bees, each is three full depth story, ten frame size hive, with nine frames in each story. No disease, plenty winter stores. In four yards. Willing to sell one or more yards. I am not physically able to do the work is the reason for selling. W. D. Achord, Findlay, Ohio.

HELP WANTED

WANTED—Helper in our apiaries for coming season. Ephardt Honey Farms, Gheens, La.

An experienced queen breeder wanted for 1946 season, or one who wishes to learn queen breeding. No better place could be found to learn this business. Jasper Knight, Hayneville, Ala.

WANTED—Man to work bees,—year round job. Can furnish house. Married man preferred. Please specify age, and wages expected. Users of alcoholic liquors need not apply. J. W. Reitz & Brothers "Sun-Glo Honey", Rt. 1, Summerfield, Florida.

MISCELLANEOUS WANTED

WANTED—Rochdale electric uncapping plane and honey pump. W. Elges, Griswold, Iowa.

WANTED—Any number up to 500 colonies of bees, with supers, in Wyoming or Colorado. Herbert J. States, Saratoga, Wyoming.

WANTED TO BUY used factory-made 10-frame empty hives. For sale used beeway holders and beeway shipping cartons. John Sueper, Webster City, Iowa.

HONEY

Wanted

A Can or a Carload

Top Prices Paid

Will furnish 60-lb. cans if desired

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

WANTED TO BUY—Modified 11 frame hives. Frances Schilling, Freeburg, Ill.

WANTED—Four thousand cans of amber honey F. O. B. anywhere in the United States. Send sample and price. Also four bee men who are capable of managing apiaries for honey production, queen rearing, package bees, by water and on land, in the North and the South. Those who are interested in permanent position, please reply. Hyland Apiaries, West Elkton, Ohio.

SUPPLIES

SAVE ON HONEY CONTAINERS IN MINNEAPOLIS. Pre-war quality tin and glass honey containers at pre-war prices. Friction top pails are back. Send for price list. Prompt shipments made from large stock of Lewis-Dadant Bee Supplies. Send list of needed supplies for quotation. Top PRICES PAID FOR HONEY AND BEESWAX IN CASH OR TRADE. HONEY SALES COMPANY, 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

MISCELLANEOUS

FREE CORRESPONDENCE COURSE in Beekeeping, Poultry, or Agriculture. Write to Correspondence Courses in Agriculture and Home Economics, State College, Pa.

EARTHWORM CULTURE — Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earthworms in Soil-building." Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., International Money Order, Apply Editor, Indian Bee Journal, Ramgarh, Dist. Nain Tal, U. P. India.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine tells how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.75. Wallingford Building, Winnipeg, Canada.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club. L. Illingsworth, The Way's End, Foxston, Royston, Herts, England.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P., South Africa.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription—$1.50. Sample copy—fifteen cents.

QUEENS!

GENTLE LEATHER ITALIANS
All Breeders Northern Record Producers.

Our system of holding queens in large two-frame nuclei until egg laying ability and pattern is proven assures you of the finest queens to be had at any price.

ANY NUMBER $1.25

Please book your orders for 1946 as soon as possible and help us to help you. Prices and terms will be announced later.

The Rich Honey Farms

JEANERETTE, LA.

PACKAGE BEES AND QUEENS

Leather Colored Italians
Bred for Production

Prices of Package Bees with Queens

Lots of	2-lb.	3-lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms, 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers' fault, file claim with them. We are now shipping. Old customers will be given preference.

THE ISLAND APIARY

Collier City, Fla.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES
1 to 25, $1.25; 26 on up, $1.10—From Imported Strains
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All queens after June 15, $1.00)
J. B. TATE & SON
1029 No. 4th St., Nashville, Tenn. **Tel. No. 34509M**

BESSONET'S

We have some open dates for next spring for our fine Italian bees and queens. Prices will be announced at the end of the year. No deposit required for having your order booked with us.

BESSONET BEE COMPANY, Donaldsonville, La.

QUEENS 3 KINDS
90c Air Mailed **Send for FREE circular**
ITALIANS
Caucasians bred to Italian drones
Daughters of Queens bred for Resistance
2-lb. pkg. bees with queen, $4.00 **3-lb. pkg. bees with queen, $5.00**
Over 25 years a shipper in U.S.A. and Canada
BLUE BONNET APIARIES, Route 2, Box 23, Weslaco, Texas

Let's Keep the Gains We Have Made

Honey enjoys a demand today which even the most optimistic producers would never have thought possible a few years ago.

Its market has expanded to include not only a wider use in the home, but also to become important in the manufacture of many food products which formerly used sugar exclusively.

However, the popularity of honey didn't "just happen". There was no sudden swing to honey during the recent wartime period, nor has the scarcity of sugar been entirely responsible for the big increase in honey consumption.

The principal reason why housewives who rarely bought honey .prior to the war are now cleaning out dealers' stocks everywhere, is that aggressive merchandising-minded packers have for the past few years been promoting the sale and use of honey on a scale heretofore unheard of in the industry.

The Expanded Market Must Be Supplied

But while honey will now be found for the first time on the tables and in the kitchens of many thousands of homes. it is inevitable that a large number of these new customers whose taste for honey has been acquired recently, will lose it quickly if an ample supply of the best honey is not available when they ask for it. Hence it is of vital importance that this country-wide market be kept uniformly well supplied year after year. Obviously, this can be accomplished only with the help of honey producers who believe that national markets must be maintained in the interest of continuing prosperity for the beekeeping industry.

You Are Invited To Market Your Honey Through The SIOUX HONEY ASSOCIATION

As a member of the Sioux Honey Association your influence, added to that of other honey producers who comprise the Association, will combine to keep the industry stable and prosperous through the unpredictable years ahead.

But whether or not you prefer to market your honey with us cooperatively, we ask the privilege of buying all or part of your production at highest market prices. As the world's largest packers of branded honey—the three widely used Clover Maid, 3 Bees and Sioux Bee brands—we invite you to cash in on the popularity which these well-known brands enjoy, and at the same time do your part to safeguard the extensive market which volume distribution has developed. Let's keep the gains we've made. Write for information without obligation.

SIOUX HONEY ASSOCIATION

Lima, Ohio **Sioux City, Iowa**

SAVE TIME!—
SAVE WORRY!—
ORDER NOW!—
Italian Bees and Queens

TANQUARY BEES AND QUEENS FOR 1946

We will assure you good weight packages, good young queens. These queens will be daughters of queens that help produce millions of pounds of honey in our Northern Units.

Save time and worry. Let us have your order NOW for spring delivery!

Guarantee safe arrival on all bees and queens.

Clipped queens, no extra charge

Queens as long as they last for the balance of the season:

1-24	25-49	50-100
$1.25	$1.20	$1.15

15% from above prices.

Tanquary Honey Farms, Inc.

Lena, S. C.

ITALIAN PACKAGE BEES AND QUEENS!

At this time we wish to thank our many customers who contributed so much toward our success in the past season. Whether yours was an order for one queen or a thousand packages, it was appreciated.

We shall not sacrifice quality for quantity in 1946, but we are offering a greater volume of the same high quality product that has pleased so well in the past. We are booking orders now, subject to revision later if desired. No deposit required. We welcome your inquiries.

We supply only overweight packages of young bees headed by vigorous young queens. Live delivery and freedom from disease guaranteed. Try us for pleasing service.

PORT GIBSON APIARIES
PORT GIBSON, MISSISSIPPI

We wish to thank our many customers for their many orders this year, and we hope to be able to fill even more orders this next season. Any customers who had orders booked before September 15 you will please repeat, as all our records and mailing list were lost by fire.

We still have the old reliable Leather Colored Italians and advise you to book early.

M. I. TINDAL BEE CO.
Greenville, Alabama

TOO LATE TO CLASSIFY

FOR SALE—500 colonies. 10-frame factory equipment for immediate sale. Equipment three years old. Certificate of inspection furnished. John L. Tideswell, 2711 North 63rd Street, Omaha 4, Nebr.

CLOVER HONEY packed in glass, unlabeled. One, two, and five lb. sizes. John Tideswell, 2711 North 63rd Street, Omaha 4, Nebr.

BY EXPRESS COLLECT—Transplanted American Basswood trees, 4-5 ft., $1.00; 5-6 ft., $1.75; 6-8 ft., $2.25; 8-10 ft., $3.00; Earlier blooming Cordata Basswood trees, 4-5 ft., $2.00; 3-4 ft., $1.50. French Pussy Willow (early pollen producers) 3-4 ft., 60c; 4-5 ft.; 90c each. Red barked dogwood and pink Tartarian honeysuckle shrubs, 12-18 inch, $8.50 per 50. Write for our NECTAR and POLLEN producing shrub and tree postpaid, $1.20 collections and circulars. NICOLLET COUNTY NURSERY, St. Peter, Minn.

WANTED EXTRACTED HONEY—Clover or light amber. C. H. Denny, 483 Moody St., Akron 5, Ohio.

Clean Anise Hyssop seed, 25 cent to pound packages. James Beecken, Rt. 1, Elgin, Illinois.

HELP WANTED—Man and wife to help bees, extracting, packing, and housework. Year round work. Willingness more essential than experience. No smoker nor drunkard. 2312 N. Humboldt Street, Portland, Oregon.

FOR SALE—165 colonies of bees, 10-frame one-story, good condition, located in southeastern Georgia, excellent package territory, also 40 new complete hives and about 125 package shipping crates. Guaranteed no disease. First $900 cash takes it. No triflers. W. C. Long, 1325 Andre St., Baltimore, Md.

HONEY WANTED—You will get a money order from us for your HONEY in 60-lb. tins. Write us what you have and what you want for your HONEY. O'Donnell & Co., 4840 Drexel Boul., Chicago 15, Ills.

No Change in Prices
1946

Make reservations now for Package Bees and Queens for next season at last season's prices. Preferred dates are being rapidly filled.

The Puett Company
HAHIRA, GEORGIA

QUALITY PLUS QUANTITY!

Each year we ship thousands of Queens and tons of package Bees. We doubt very much that there is a county in the United States or Canada where bees are kept to any extent that has not at some time had STOVER BEES OR QUEENS!

To check the quality of our product and our reliability we ask that you contact any of these many customers.

NOW BOOKING ORDERS FOR NEXT SEASON

THE STOVER APIARIES

MAYHEW, MISSISSIPPI

PACKAGE BEE BUYERS

Now that the war is over and the prospect of labor and materials look brighter, you should place your order at once with

ROSSMAN & LONG

for those industrious, thrifty bees you have so long desired. Reports from many of our customers say that our bees have done up to one third better in production than those of their neighbors secured from other sources.

There must be a reason for this. Here is the answer: Our breeding queens are selected for their performance, honey gathering, good wintering, and gentleness being oustanding. These points with many other desirable characteristics assure you the best production to be found in Package Bees.

Do not delay your order too long to have your desired shipping date!

ROSSMAN & LONG

Box 133 **Moultrie, Ga.**

QUICK-ACTING

BOTTLE FILLER

Beekeepers have wanted for some time a quick-acting valve for honey. Our bottle filler operates with the slightest touch of the finger and cuts the flow of honey without any drip.

$7.50

Mailed only from Medina. Wt. 2 lbs.

THE A. I. ROOT CO. Medina, Ohio

SOYBEAN FLOUR (Pollen Supplement) AND POLLEN TRAPS

We are distributors of Staley's Lo-Fat, High Protein expeller processed soyflour for beekeepers. The flour and materials for our pollen traps are of the highest quality.

KILLION & SONS APIARIES
Paris, Illinois

Due to unfavorable conditions, we are closing the season and there will be no more queens available. Now booking orders for 1946.

B. J. Bordelon Apiaries

Moreauville, Louisiana

CHOICE ITALIAN QUEENS
and Package Bees
Thanks a Million, Folks!

We cannot accept any more orders for package bees and queens for this season.

CLIFTON APIARIES

P. O. Box 684 **Oroville, Calif.**

BEEKEEPERS MAGAZINE
Serving the National Federation.

Subscribe now at $1.00 per year. Copy current issue 10c. 75c a year through your Association Secretary.

Rt. 5, Box 181 **Lansing, Mich.**

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice "The forum for the thoughtful." One year $1.00, two years, $1.50; sample copy, 3c stamp.

With Gleanings it provides a combination that covers the beekeeping field.

Both magazines for one year, $1.75

BEEKEEPERS ITEM

P. O. Box 687 **San Antonio, Texas**

N O T I C E !

Sold out for the season on bees and queens, thanks for your order and cooperation.

BOLLING BEE COMPANY
Bolling, Ala.

Three Band Italian Package Bees with Queens for 1946

	1-24	24 to 48	48-up
2-lb.	$4.00	$3.75	$3.60
3-lb.	5.00	4.75	4.60

E. R. RALEY
Fitzgerald, Ga.

OTTAWA TESTS ON WINTERING NUCLEI

(Continued from page 455)

ages delivered at Ottawa was $3.65, thus the nuclei cost less than the packages and besides gave a slightly larger average crop.

Main Advantage

The main advantage of wintering double nuclei is that it provides a surplus of young, vigorous queens in the spring of the year when they are difficult to secure elsewhere and when any delay in requeening strong colonies has an adverse effect on colony production. The second advantage is that they cost less than imported packages and compare favorably with them from a production standpoint. Every beekeeper is well advised to winter over spare queens in double nuclei not at a sacrifice to normal colonies, however, but as extras for emergency use in the spring and for increase if so desired.

BETTER-BRED QUEENS–Three-Banded Italians

We appreciate your business in the past and solicit your future business on the merits of our service and quality. Let us quote you our 1946 prices.

CALVERT APIARIES, Calvert, Alabama

YORK'S PACKAGE BEES & QUEENS

Quality Bred Italians

BOOKING ORDERS NOW FOR 1946, SAME TERMS AND SUBJECT TO LATER REVISED PRICES FOR COMING SEASON. DO NOT DELAY—BOOK NOW AND BE SAFE!

YOURS FOR QUALITY, ASK ANY OF OUR CUSTOMERS

YORK BEE COMPANY

JESUP, GEORGIA, U. S. A.

(The Universal Apiaries)

This photo shows portion of one of our queen yards containing over 6000 nuclei

1946 ITALIAN PACKAGE BEES AND QUEENS 1946

2 lbs. with queen	$4.00
3 lbs. with queen	5.00
Extra queens, each	1.25

• BY EXPRESS •

OVERBY APIARIES, BUNKIE, LA.

THE UPPER FLIGHT HOLE

(Continued from page 456)

that causes much of our wintering losses. This moisture often freezes during extremely cold weather, and we have seen sheets of ice on the frames and inner walls of hives during periods of severe weather. A small bottom entrance and a flight hole near the top of the hive assists in eliminating this moisture.

Aside from the moisture elimination, the upper flight hole provides an opportunity for bee flight, when the lower entrances become blocked with snow. Last February the hives were all covered with snow for nearly a week in some of the out-apiaries, and the upper flight hole gave plenty of air for the colonies, and as the snow melted about the hives, many bees came out and dropped on the snow. In a few instances several hundred bees were found but these were mostly old bees that would have flown out and died under ordinary conditions. We shoveled the snow away from the upper flight holes, but I do not believe there would have been any injury to the colonies even if this had not been done. I recall an article by our friend Allen Latham some few years ago where he had lost a great many colonies by smothering during an ice and sleet storm in early spring.

Regarding damage to the hives by boring a hole in the upper hand hole, we feel that any slight damage to the hives to be greatly offset by the advantages of this hole for both winter and summer use. In moving colonies, we twist folded strips of newspaper in these upper flight holes, and have not found it any disadvantage what-so-ever. This is easily removed and requires only a moment of time. Special tunnels may be made for upper entrances, but the busy beekeeper with out-apiaries, has little time to make them up and I fail to see where they would have any advantage over the upper flight hole.

[One advantage in having a flight hole in the hand hold is that the hand hold furnishes a small landing place for bees. Some object to flight holes in the hand holds because the operator may crush incoming bees and get stung. We put flight holes about 1½ inches below the hand hold. The exact position seems to make little difference.—Ed.]

Holliston, Mass.

Bees! SUNKIST Queens! Italian

Orders for Spring of 1946 are coming in fast!

We will not accept more orders than we can reasonably expect to fill. Order early and be sure of your shipping date.

We offer three banded Italians, live delivery, health certificate, and satisfaction!

10% books your order, balance 10 days before shipping.

Prices:

	Queens	2-lb. pkgs.	3-lb. pkgs.
1-25	$1.10	$3.50	$4.50
25-up	1.00	3.40	4.40

Sunkist Bee Company

Route 2, Box 9 Houma, La.

AMERICAN BEE JOURNAL

Hamilton, Illinois

Oldest bee journal in the English language. Keep up on markets, practices, scientific data, regulations, plant possibilities.

Two years, $1.50—Order today!

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCTOBER 1, 1945.

State of Ohio, County of Medina ss:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Alan I. Root, who, having been duly sworn according to law, deposes and says that he is Business Manager of Gleanings in Bee Culture, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse side of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—
Publisher The A. I. Root Co., Medina, O.
Editors E. R. Root and M. J. Deyell, Medina, O.
Business Manager, Alan I. Root, Medina, O.

2. That the owner is: If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, the name and address, as well as those of each individual member, must be given.)

The A. I. Root Co., Medina, Ohio; Donald L. Demuth, New York City; J. T. Calvert, Medina, Ohio; H. H. Root, Trustee A. I. Root Estate, Medina, Ohio; E. R. Root, Medina, Ohio, H. H. Root, Medina, O.; Ralph I. Bostwick, P. O. Box 666, Oak Ridge, Tenn.; Abel A. Bostwick, Seville, O.; Alan I. Root, Medina, O.; Ethel A. Calvert, Alhambra, Calif., Mrs. Scott Goldthwaite, Chicago, Ill.

3. That the known bondholders mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

ALAN I. ROOT, Business Manager.

Sworn to and subscribed before me this 25th day of September, 1945.

NEAL KELLOGG, Notary Public

(My commission expires December 15, 1945.)

NOW BOOKING

1946 Packages

"Dixie's Best" (Italians)

TANNER BEE CO.

Laurel, Miss.

Bright Three-Banded Italian Queens

The kind that every beekeeper is proud to get. Gentle, good honey producers. Price balance of season: 1 to 24, $1.10; 25 to 99, $1.00; 100 up, 90c.

Taylor Apiaries, Luverne, Ala.

Italian Bees and Queens!

We are booking orders for Spring, 1946 Only 20% with order, balance ten (10) days before shipping date. Prices as follows:

2-lb. package with queen	$3.50
3-lb. package with queen	4.50
4-lb. package with queen	5.50

The Star Bee Farm

HESSMER, LA.

WE ARE NOW BOOKING ORDERS FOR SPRING, 1946!

Only 20% down, balance 10 days before shipment.

2-lb. package with queen	$3.50
3-lb. package with queen	4.50
4-lb. package with queen	5.50

Dixie Bee Farm

Normand Bros., Prop.
HESSMER, LA.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor, P. O. Box 20 West Maitland New South Wales Australia

"A CALL FOR HELP"
Will you help us keep our customers happy?
We are appealing to our old and new friends alike:
"Bring in or ship us your Honey"
We need it—B-Z-B jars need it—and the busy housewife needs it.
You help us help them keep up their energy.

B-Z-B Honey Company

361 E. Valley Blvd., ALHAMBRA (Los Angeles County), CALIF.

the Hubbard APIARIES

WRITE FOR
FREE CATALOG

Quality Bee Supplies. Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES
Manufacturers of Bee Supplies
ONSTED, MICHIGAN

ANNOUNCEMENT—
Due to the loss of our workshop by fire, we move to GHEENS, LA.
For Package bees and queen, write:
EPHARDT'S HONEY FARMS, GHEENS, LA.

Let Us Have Your Package Orders for
1946 NOW!

Can Supply Queens in limited numbers during November
PROGENY-TEST THREE-BANDED ITALIAN STRAIN
Also Mraz's and other reliable Breeders' strain of High Quality
Daughters of Stock Bred for Resistance.
HEALTH CERTIFICATES ON ALL SHIPMENTS!
Prices 1-9 at 90c; 10-25 at 85c; 25-99 at 75c; 100 and up, 70c
No extra charges for clipping queens.

GARON BEE COMPANY
DONALDSONVILLE, LA.

Buy U. S. Victory Bonds

KELLEY—"The Bee Man"

Tin Pails

We again have a large stock of tin pails, cans and glass jars, as listed below, for quick shipment from Paducah.

CARTON 50—Five Pound Pails—Wt. 26 lbs. ..... Price $3.15
CARTON 50—Ten Pound Pails—Wt. 40 lbs. ..... Price $4.85
CARTON 16—Sixty Pound Cans (2½ in opening) ..... Price $5.40
Wt. 54 lbs.

GLASS

16-Oz. Economy Jars—Ctn. of 24—11 lbs. ..... Price $0.70
32-Oz. Economy Jars—Ctn. of 12—12 lbs. ..... Price 0.42
5-Lb. Economy Jars—Ctn. 6 ea. wt. 10 lbs. 12 Ctns. $5.00 24 Ctns. 9.90

5% discount from above prices on orders of over $50.00 at one time!

THE WALTER T. KELLEY CO.
Paducah, Ky.

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S
Economy Foundation

Not excelled for quality strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons
Rt. 4 Bay City, Mich.

Honey Containers

We have a complete line of "Utility" style jars with white coated covers, lacquered and wax paper lined.

10-lb. jars per case 4 ..... 45c
5-lb. jars per case 6 ..... 42c
2-lb. jars per case 12 ..... 42c
1-lb. jars per case 24 ..... 73c
½-lb. jars per case 24 ..... 67c
⅓-lb. jars per case 48 ..... $1.28

Standard square American cans, well seamed and soldered, with 2½" screw cap wax board lined.

Box of 2—60-lb. cans $1.00
Carton of 24—60-lb. cans 7.44
60-lb. cans in bulk each ..... .32

5-lb. tin pails, per carton 50 ... $3.35
10-lb. tin pails, per carton 50 .. $4.95
5% discount on tin and glass order of $50.00; 10% discount on tin and glass orders of $100.00.

We also carry a full stock of other honey packages—Comb honey cartons and wrappers.

August Lotz Co.
BOYD, WISCONSIN

Be Prepared for the 1946 Season. Buy Your Supplies NOW! Prompt Shipment.

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10-fr. Wire Queen Excluders, wood bound, 5 or more	each	.80
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No. 1 Grade 4¼ x 4¼ x 1⅞ split 3 sides	per 500	7.10
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5 lb. glass honey jars, packed ½ dozen	per case	.55
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25-lb. lots Thin Surplus (following sizes): 3⅞ x16 4⅛ x16¾ 4⅛x17¼ 3 11/16x14¼		19.75
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The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.